



Computer Weekly

Thursday, June 16, 1983

Telecomms and privacy are back

by George Black

THE government is to give top priority to bringing back its Telecommunications Bill, with Data Protection likely to come close behind.

New Trade and Industry Secretary Cecil Parkinson, rewarded for his part in getting the Tories returned, has confirmed his intent to re-introduce the Telecommunications Bill as a matter of urgency.

He said the denationalisation of British Telecom, with 51% of shares offered for sale to the British public, would be given a top priority. The plan could net from £2 to £4 billion.

Parkinson was one of the main beneficiaries of Mrs Thatcher's post-election reshuffle, in which ministers responsible for the computer industry in the previous administration were conspicuously passed over.

Kenneth Baker failed to win promotion to the Cabinet and stayed out as Minister for Information Technology, answering to Parkin-

son. Patrick Jenkin was pipped for the Chancellorship by Nigel Lawson and moves sideways from Industry to Environment.

The Data Protection Bill and Police and Criminal Evidence Bill, with its important clause on the admissibility of computer evidence in court, now fall to new Home Secretary Leon Brittan to steer through. Home Office officials were in no doubt this week that both pieces of legislation would be well up the MPs' agenda after the Queen's Speech is delivered next Wednesday.

The Institute of Data Processing Management and LAMSAC, the local authorities' management services committee will be putting up alternative proposals for a privacy law. But IDPM secretary-general Ted Cluff was gloomy about their chances.

"I think the new men will be even less receptive than the last lot," he said.

The White Paper on cable net-

works, which also fell through when the election was called, should be revived again without much delay.

Parkinson is thought to be less keen on State investment in high technology than was Jenkin, who may have incurred disaffection by supporting the Alvey scheme for spending on fifth generation computer research. The re-union of the departments, divided by Labour under Harold Wilson, is unlikely to bring the computer-deadened super-ministry on the Japanese model demanded by some Alvey committee members.

Parkinson, plucked from the Trade department where he was a Minister of State to become party chairman, is believed to share closely the Premier's views on non-intervention in business. The trade section, stripped of some transport functions which are shifted to Environment, is more likely to focus on stimulating competition than steering funds into research or production.



DOWN... "Explosion of interest in gate arrays."

Ferranti chips in with second plant

by Kevin Cahill

WHILE Immos struggles into volume production in Wales after five years of effort, Ferranti has run up a second chip plant in just 10 months - a year ahead of schedule.

The plant, which will create 200 new jobs in Chadderton, Lancashire, is Ferranti's second high volume wafer fabrication facility established in the recession-hit North.

According to Bryan Down, managing director of Ferranti Electronics, the decision to bring the opening of the plant forward by one year was made in response to unprecedented demand for chips, particularly gate arrays.

Ferranti got into gate arrays early and has taken a world lead in the sector.

Market research company Dataquest, which specialises in watching the semiconductor industry, last year reported a market growing at 2.6%, in which Ferranti had growth of 30%. Ferranti's 1982 growth has since about doubled.

Down described Ferranti as experiencing an "explosion" of interest in gate arrays, with a substantial number of new customer designs taking off into production.

The new designs coming on-stream earlier than expected coincided with rapidly increasing demand in the established programmes, which resulted in a doubling of ULA sales in 12 months, according to Down.

The increase in ULA sales came when sales growth was well ahead of budget in Ferranti's other integrated circuits, full custom chips and telecommunications semiconductor products.

This made the company the fastest growing chip producer in the world, also the only UK semiconductor manufacturer mentioned in the Dataquest survey.

The factory, which will cover 40,000 sq ft, is a total phase and a second and subsequent stages are planned.

The initial phase will create about 200 jobs and double Ferranti's capacity in semiconductors. The factory was completed in April, against an original completion date of June 1984 and cost about £7 million, some of it from the Department of Industry.

Ferranti's ability to open its factory this year is undoubtedly a significant coup. At the beginning of this year over 24% of all US based semiconductor capacity was idle.

Thanks for the Memory

MEMORY Computer, the

based computer manufacturer which earlier this year was on the UK Stock Exchange, listed Securities Market, turned in dramatically improved profits and turnover.

The company, which has 30% of its sales and operating profit in the UK, announced a 94% improvement in pre-tax profit of £1.021 million for the year ended March 31. Sales were up by £1.1 million to £7.3 million from £6.2 million the previous year.

CPU goes public

AFTER more than 18 months of postponement, Working CPU Computers is going public next week on the Unlisted Securities Market. The plan is expected to value the company at £11 million and add founder Tim Fitzpatrick and David John to the growing list of recently created UK computer industry millionaires.

First machines

MASS micro maker Commodore has started churning out machines from its UK assembly plant at Corby. Nearly 8,000 Commodore 64s bearing the "British" label have been produced, with circuit boards shipped in from Far East. The company plans to sell 200,000 64s in this country between now and December.

£1.7m takeover

TRIVECTOR, the system based in Sandy, Bedfordshire, has been acquired by the Vintners group of Bury St Edmunds. Vintners paid £1.7 million in shares.

PT7 cuts costs

Ferranti Computer Systems

Jefferson tells BT staff to acquiesce

George Black

BRITISH Telecom chairman Sir George Jefferson has written to his 10,000 employees urging them to continue opposing privatisation.

But trouble was in the air again last week as the Post Office Engineering Union said two of its men had been sent home for refusing to accept a connection to the private Mercury network. This was the first time the dispute has led to a direct confrontation.

BT said it would not comment on matters concerning individual employees but they had a contractual agreement to provide Mercury with their work.

The union said one man at its Luton branch and one in the City of London had been sent home for failing to connect up Mercury's headquarters to its London branch.

It will pay the wages of the two men while they are out and will tell them not to step into the gap to do the work.

The privatisation bill was expected to get a high priority in the Queen's Speech after a forecast declaration on the subject by new Trade and Industry Minister Cecil Parkinson.

But the union thinks it is unlikely that the bill will get through all its stages before the summer recess.

The POBU will renew its campaign against the legislation as soon as its re-appears before the Commons.

Sir George's 800-word letter urged staff against industrial action. "This would be damagingly divisive," he writes, "Industrial action, whether against privatisation or interconnection, would be seen as delaying the will of Parliament and the electorate."



BRADY... Wants to deprive the USSR of militarily valuable technology.

US steps up its ban on exports

by Kevin Cahill

US CUSTOMS officials, under the auspices of a programme called Operation Exodus, have seized 225 shipments of electronics and computers destined for Western European countries in the last two months.

Operation Exodus was launched in October 1981 with the help of \$30 million from the Pentagon, and is aimed at limiting shipments of computers and electronics to Eastern Europe.

So far the programme has netted 1,395 shipments, of which 145 were destined for the UK, in the first 18 months.

In the last two months 83 shipments for the UK have been seized. This is a sharp stepping up of the rate of attrition on exports to the UK and comes in the wake of US administrative complaints that the UK is the least developed country in the world in terms of illegal shipments to the USSR and its allies.

The recent seizure of UK-designed goods compares with the lower, though increased level of action against other members of NATO.

West German companies have had 52 shipments detailed over the past eight weeks, Italy 22, Japan 22, France 31 and Norway 15.

At least one recent shipment detained by the US customs officials was intended for the UK Ministry of Defence, and UK defence-related companies like Marconi and Ferranti have not been exempt from detainment of goods.

According to one electronic engineering company, which asked not to be named, some small UK electronic companies are already folding because of the US action.

The Department of Trade acknowledges that it has received representations about the situation and says that the government is continuing the very strong and specific representations made by Mrs Thatcher at the Williamsburg summit.

Backing for the tough stance taken by the UK government has come in unequivocal terms from the 2,000 members of US Chamber of Commerce in London. The chamber president, Roger Lloyd, told visiting US Under Secretary of State For Export Administration, Lawrence Brady, that the

Department of Commerce should not be permitted to do indirectly, through delays in issuing licences, what it cannot do directly.

This is believed to be a specific reference to the recent actions of the US customs officials who act as agents for the Department of Commerce in the enforcement of the various controlled lists of goods, including computers and electronics. Lloyd also warned Brady that responsibility for export licensing should remain in the Department of Commerce.

Apart from helping to fund the Operation Exodus drive, the US Department of Defence has recently tried to insist that it should have first sight of all export licence applications.

In addition, the bid to introduce a military committee into the Co-com structure in Paris, as well as the new proposals on embargoed goods that are before Co-com, have all originated from the US Department of Defence.

Cocoms is an informal committee set up in 1949 by the NATO allies and Japan to coordinate export controls.

Continued on back page

Japanese agree on home standard

by John Kavanagh

TOP Japanese computer manufacturers have agreed on a standard design for home computers which will enable software for one machine to run on all the others.

The standard, called MSX, was developed by 14 firms with the US microcomputer software company Microsoft and manufacturer Spectravideo.

Its likely impact on the US and European markets is being studied by US manufacturers - Commodore, Texas Instruments and Tandy are already considering

switching to the standard. The first products following the standard are expected at the end of the year, when Spectravideo will announce an MSX adapter for its existing home computers.

Spectravideo will launch a new MSX computer in January 1984, when three US software houses are expected to announce systems for the machine. MSX home computers from Japanese firms are expected to follow early next year.

The Japanese, including NEC, Fujitsu, Hitachi and other leading names, approached Microsoft and Spectravideo for a joint development project on the standard. They selected the Spectravideo processor for the standard design.

It is based on Zilog Z80A, General Instruments and Texas Instruments processor chips. The standard extends beyond the processor design to factors such as the positioning of the input and output ports.

Spectravideo president Harry Fox said the agreement removed the biggest obstacle to growth in the home computer market: hardware and software incompatibility.

GE to set up European subsidiary

THE American General Electric Company is setting up a subsidiary to get a foothold in factory automation in Europe. General Electric Industrial Automation-Europe will be based in London with a demonstration centre in Frankfurt. Chairman will be vice-president Paolo Fresco.

BCS charter

BRITISH Computer Society members have supported a plan to petition for charter status. They voted 27 to 1 in favour of the proposal. Deputy president David Farnberg said they were showing a willingness to shoulder responsibilities such as those borne by the existing chartered professions.

DPCE stock

BRITAIN'S largest independent computer maintenance business is to be given a full stock market listing within three weeks. DPCE, which handles accounts such as British Airways and National Giro-bank, is priced at around £10 million and the extra cash generated will help overseas expansion.

OEM takeover

HULL-based OEM for Texas Instruments mini systems Radius Computer Systems took over another TI OEM, Hyman Computer Services of Oldham, for an undisclosed sum last week. Radius's Sales Director Mike Dixon expects the deal to add another £1 million or so to the company's annual turnover of about £3 million.

Network chief

THE Department of Education and Science's Computer Board has appointed Professor Mike Wells of Leeds University to the new part-time post of Director of Networking.

Epson pays \$1m in biggest CP/M deal yet

DIGITAL Research aligned itself with the lower end of the market this week by signing a deal to put its eight and 16-bit operating systems on Epson kit. The agreement, thought to be worth nearly \$1 million, is DRI's biggest yet, and, with last month's \$300,000 Fujitsu deal, strengthens DRI's position with Japanese manufacturers.

"For us it's a very significant deal," said Gary Kildall, DRI founder and chairman. "The Japanese approach to technology will have a great impact on the computer market. They're beginning to get very aggressive."

Digital Research held a Press conference this week on the strength of Kildall's presence in London. While reluctant to join in the fracas surrounding DRI's

rivalry with Microsoft, Kildall made it clear that he saw MS-DOS as no competition to the CP/M range (CP/M and MS-DOS - See stories pages 18 and 19).

"My competition is not MS-DOS but PC-DOS," said Kildall. And the way into that IBM market is through the languages, he added.

Last week DRI said its entire range of languages would be made available to run under PC-DOS, the IBM PC's native operating system.

Kildall claimed that outside the IBM PC market the CP/M range is being adopted by most of the major OEMs. "Competition against a large company has made a strong team out of DRI. If you hear people say that CP/M is dead, just look at our revenue and sales



KILDALL... "For us it's a very significant deal."

of computer systems in the range below \$500."

"Where we are getting sales is in Concurrent CP/M," he said. "If you look at MS-DOS, the technology such as concurrency and hardware graphics is not there."

US puts foot in door at Cambridge centre

TWO US companies have a foot in the door of the Cambridge CAD Centre. The centre was sold to an ICL-led consortium for £1 million last month, but John Chivers, managing director of the new limited company, Cadacentre, is on secondment from a subsidiary of US CAD giant ComputerVision.

And mini-maker Prime, which owns the marketing rights to many of Cadacentre's products through its buy-out of Stevenage software house Competa, is strongly tipped to have a non-executive director on the board of the new company.

But a further two spin-off companies have taken valuable expertise from Cadacentre. Following the lead of image processing firm CHMS, which let up on its own with 14 Cadacentre staff in May, plan section manager Peter Win-

ter and three other centre employees are forming their own company, to provide consultancy and programming services to the processing industry, and ex-basis software group manager Terry Palmer is setting up a company to produce CAD and business graphics software.

John Chivers is one of the four founding partners of Cambridge Interactive Systems. CIS is owned by ComputerVision, and Chivers is in turn a shareholder of ComputerVision. It is not yet clear who will replace the civil servants who have been running the centre and are due to return to Whitehall shortly.

A meeting was due to be held yesterday (Wednesday), at which the composition of the board should have been finalised.

UK release of IBM systems

IBM last week released its clutch of relational database systems for medium and large scale users in the UK.

The offering consists of a management system for MVS, DB2 (Data Base 2), a selective data extracting system, DXT (Data Extract) and an enquiry and report writing system, QMF (Query Management Facility).

The company is touting DB2 as the solution for business professionals looking for decision support systems in the MVS/ESA and MVS/370 environments. Its data is available to IMS, CICS and TSO users with the VS system.

DXT can work on IMS/VS, VSAM and SAM files to prepare them for use by end users.

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Continued on back page

Software File 9
Company News 10
Micro News 11
Profile, Platform 12
Letters, Leaders 13
The Election - how did 14
DP's candidates fare? 16
The Oakley interview 17
Computers 18
Workplace 19
People 20
US Export Administration 21
Act 20/21
Ergonomics 22
Products 23

Are you sitting comfortably? 22

Computers - the third heat 17

Job Vacancies 26/55

Honeywell puts micro system out

by Nuala Moran
HONEYWELL has introduced its first microcomputer-based business system, microSystem 6 in this country. MicroSystem 6 is compatible with IBM communications protocols SNA and Bisynch, and Honeywell's own distribution system architecture.

The company says that this gives its micro the networking capacity to bridge the gap between single user personal computers with limited networking capability and more powerful minicomputers operating in distributed computing networks.

There are two models in the range. Model 6/10 is a business micro for use as a terminal in a network. A basic system includes 17,000. Model 6/20 which can be used as a standalone system or as a terminal, has a memory range extending up to 1Mb. Prices range from £12,000 to £28,000, with a

typical system costing around £18,000.

MicroSystem 6 uses a Honeywell Micro-6 chip which allows it to run existing Honeywell DPS 6 minicomputer applications software.

Users can take advantage of the personal computing software that has been developed for Intel's 16 bit 8086 by plugging in an optional 8086 based board.

The machine can also serve as an intelligent terminal in a distributed data network hosted by Honeywell or IBM mainframes and minis. Data can be accessed from the mainframe, incorporated into applications running on microSystem 6, and the finished data can then be transmitted back to the host computer.

Honeywell is claiming that the introduction of the microSystem 6 gives it the widest range of compatible communicating micros, minis and superminis on the market.

America's Gould wants a CAD buy

by Ron Costes
AMERICAN electronics firm Gould is looking for UK software companies to buy, particularly in computer aided design.

The \$1.6 million company has been snapping up computer and electronics firms for over three years in a massive switch from its previous industrial and electrical base. And it will soon have \$300 million to spend when the sale of its battery company is completed.

David Simpson, managing director and chief operating officer, said: "Our only obvious gap is in software. The demand is insatiable. So we will be buying additional software companies. We will be looking in this country for a CAD (computer aided design) centre."

ARC of Cambridge, the only sizeable independent CAD house left in the UK, last week flatly denied that it had been talking to Gould. The UK CAD firms have

been subject to a flurry of takeovers this year.

Compesa was sold to Prime, the Cambridge CAD Centre has been taken over by a consortium led by ICL and Quest Automation sold 51% of its CAD business to an Arab consortium.

Gould earlier this year made an offer for US CAD/CAM software house Grafftek but withdrew it later after negotiations.

But Gould will be looking for other types of software companies. Simpson said: "We will be looking for application software for our newly launched workstations and will be taking on segments of industry. We are interested in buying companies working in Unix and 32-bit architecture."

And he is confident that Gould has solved the people problem - that the people working for any software company that the electronics giant took over would

stay with it after the takeover.

He said: "We can buy in. We have done a good job of integrating teams in place with the and SCL - they're all still in Systems Engineering Ltd and Modicon were two of our earlier acquisitions."

And Simpson claims that Gould has put up the extra cash for the takeover. He said: "We made successful companies successful."

In the last year a half Gould has acquired semiconductor and AMI and gallium arsenide producer Dancel in the US. In the UK it bought Bryans Southern Electronics, a micro-based plotter firm and took a 49% interest in Teltec, a local area network specialist.

In 1979 Gould acquired unsuccessful attempts to take semiconductor makers Motorola and Fairchild.

UN urged to curb software piracy

by John Kavanagh

THE United Nations is being pulled into the software piracy issue to promote international copyright treaties which can protect software products.

A meeting of top government officials from 27 countries in Geneva last week rejected a proposed software protection treaty, arguing that there were already enough safeguards in national and international laws. The problem, they said, was making suppliers, users and pirates aware of the potential of these rules.

The meeting was run by the World Intellectual Property Organisation, which is funded by governments. Delegates called on the organisation and the UN to form a group to study and promote existing worldwide treaties and the extent to which they cover software piracy. Such top-level work would put pressure on governments to extend and tighten their national copyright legislation to cover software.

It was clear there's no lack of international agreements but there's certainly a need for publicity for them," said Ronald Robertson, head of the legal department at UK software house CAP and chairman of the Computing Services Association's legal affairs group.

Robertson represented the European CSA, one of 15 non-governmental organisations, at the Geneva meeting.

Robertson said copyright laws could be interpreted to cover unauthorised use of software by customers. A program was "copied" from disc or tape into memory and translated from source code to object code before it could run, he said.

Systems which were substantially not exactly the same as an original product would also be covered by copyright rules.

Robertson hoped the meeting's decision would get some action from the UK government, which has been working on amendments to the Copyright Act for two years.

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BAKER... Wants universities to be commercially-minded.

Baker puts varsities in business

by John Kavanagh

INFORMATION Technology Minister Kenneth Baker is to propose funding for closer contact between industry and universities to the government this week. And a £37,000 National Computing Centre plan to get university software sold by services companies could be one of the first projects to benefit.

The Department of Trade and Industry said it wanted universities to be more commercially-minded and to forge links with high technology industries in particular.

Baker is proposing funds for specific joint projects rather than for liaison in general. The Department said details of the scheme would probably be worked out before the Commons' summer break.

The National Computing Centre and a committee of senior university people involved in promoting industry liaison have asked the Department for backing for a survey aimed at matching university software to gaps in the market. The money would also be used to help universities prepare documentation to commercial standards. Baker has shown interest in the proposal.

Polytechnics have also approached the NCC about being included in the scheme.

NCC director David Fairbairn has written to the Department this month to reply to its enquiries about the original proposal, so the way should now be easier for the government to award the funding.

Software copying feud is settled out of court

by George Black

A DISPUTE over a software copying device between Dataview of Colchester and FAW Electronics of Chesterfield has been settled out of court.

The case centred on a device called Masterkey which FAW designed and sold. Dataview claimed it allowed the Wordcraft software to be copied illegally. Its managing director Paul Handover obtained a High Court injunction on June 2 to stop the Masterkey being distributed. He took the unusual line that FAW was inducing his customers into a breach of contract - no recourse to copyright law was involved.

Now FAW has agreed to stop selling the product. Handover said they would be given a list of those

who had already bought it. Dataview has dropped its damages claim and each side will pay its own court costs. A further court hearing due last week was dropped by mutual agreement.

Masterkey is said by Dataview to be a programmable "dongle" which by-passes the Wordcraft protector and allows users to copy their programs avoiding any further payment. A "dongle" is a hardware item which prevents duplication of programs.

"We considered it represented a major threat to our livelihood," said Handover.

A spokesman for FAW said they could not afford to fight the injunction so they had to accept its terms, even though they considered it unfair.

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W. H. SMITH... Three more specialist shops will open next week.

Smith extends micro chain

by Philip Hunter

W. H. SMITH will next week extend its micro retailing by opening three specialist computer shops at its branches in Birmingham, Bristol and Croydon. A national network of computer shops will follow next year if the first three pick up the expected extra sales.

As a fillip to buyers, the three shops will offer Mattel Electronics' new Aquarius home computer several months before the official UK launch.

Advance shipments from the Hong Kong factory have already begun.

"The opening of these specialist shops marks a major development in microcomputer retailing and enables us to meet the needs of both the home and office user," says Stewart Binnie, merchandise controller for the retailer's home computer products.

Smith is already one of the leading high street retailers of computers. But Binnie hopes that the new shops will pull in serious business buyers.

"We want people to be able to try out hardware for themselves and have the opportunity to discuss and compare the various specifications and software packages with our trained staff," Binnie explains. To help achieve this, there will be four console units for customers to try the systems.

Smith at present sells mainly the Sinclair ZX81, Spectrum and the BBC Acorn computers. Binnie claims that it will be the first High Street retailer to offer the BBC Model B machine, for £399.

London University gets a Cray

by Robert Perry

THE University of London Computer Centre, ULCC, has signed the first university-based Cray supercomputer in this country and is spreading its net to serve all universities.

Since 1974 the centre has served numerous universities in the north of England. It is now to be developed as a national centre. A new computer suite, built to house the Cray IS and the Apollo 470V8 acquired two years ago was formally opened last week by London University's Chancellor Princess Anne.

The extension was completed in April, and the Cray moved down from the Science and Engineering Research Council's Daresbury Laboratory in May.

The Cray had been on lease to the SERC, but became surplus to SERC requirements, so it was agreed in early 1982 that the machine should be bought by the Computer Board and moved to ULCC. It was upgraded, with store doubled to one megabyte and disc storage upped to 5.4M Mbytes.

The Cray now sits next to the Amdahl machine in the new computer room. ULCC's original Control Data kit - still filling the original computer room - has plenty of work as the means of access to the Amdahl machine.

The existing communication network feeds into the CDC kit and then into the Amdahl through a hyperchannel link. A front end system for the Amdahl is still under development.

Charity must pay VAT

by George Black

COMPUTERS are not medical or scientific equipment, so charities which donate them to hospitals must pay value-added tax.

This ruling was given by Lord Goff in a VAT tribunal in London in rejecting an appeal by Clinical Computing against the Customs and Excise Commission.

The DEC LS-11/73 machine in the test case was given by Clinical Computing to the Royal Brompton Hospital, Sheffield, in July 1982. The Sheffield Area Charity Association, which collected the money for the donation, objected to having to pay £5,000 in VAT. But the case was lost.

After the appeal, Stan Nutall of the Charity Association said: "It is ludicrous that we have people out there rattling tins to give something to the government and then have to pay 15% extra for the privilege."

Mr. Chantler - VAT Reform

Group is lobbying for legislation to be introduced.

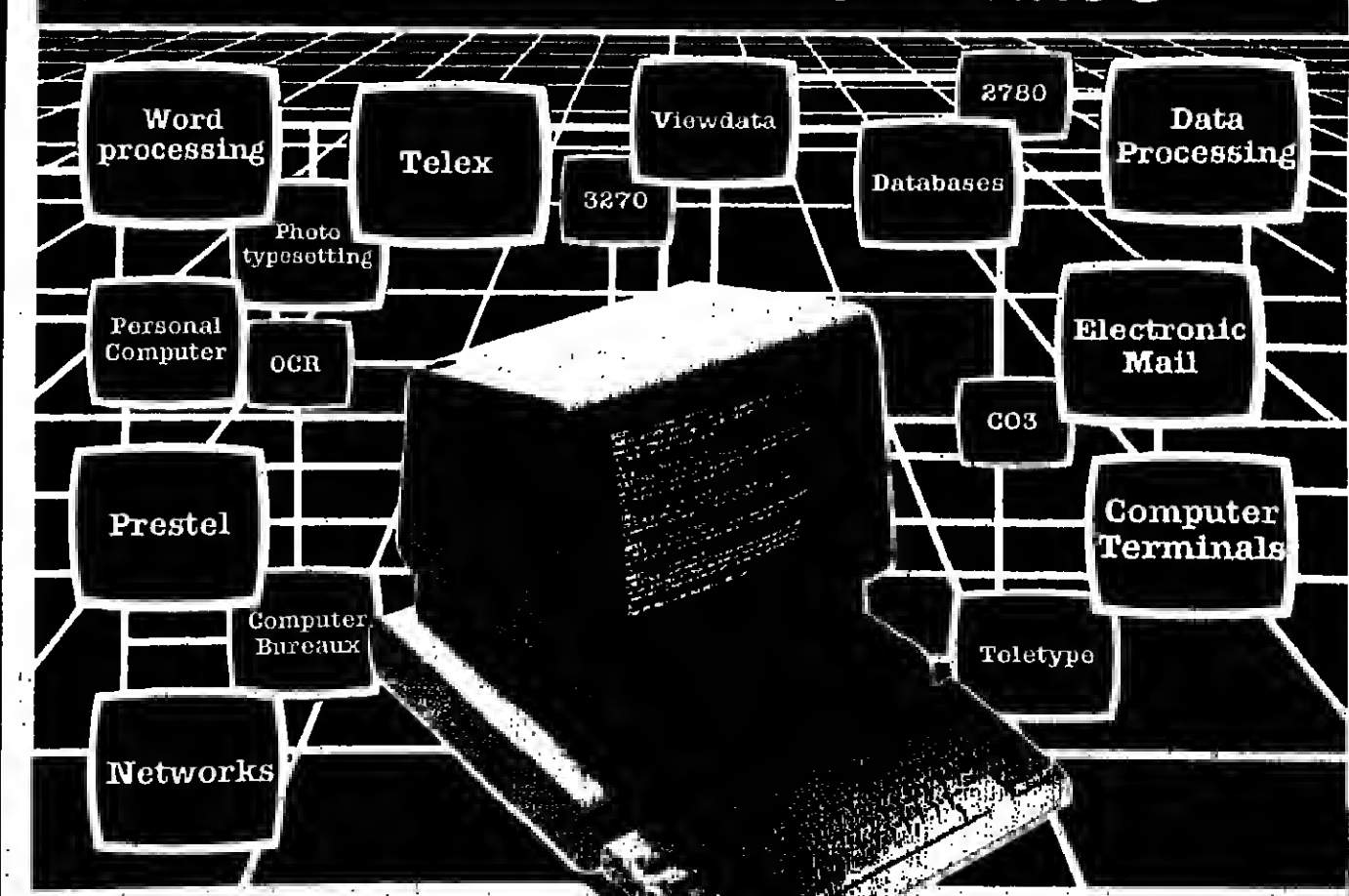
The Sheffield hospital computer is used to record and graph the medical conditions of renal dialysis and transplant patients. The tribunal ruled unanimously that the function of the machine was not a medical or scientific piece of equipment.

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General Sales: Wordplex, Director of Marketing, Wordplex Ltd, 144, Road Road, Basingstoke, Hampshire RG1 1RT. Tel: 0756 81000. Telex: 81000.

Amdahl switches attack to software

AMDAHL last week switched its attack on the IBM market from the hardware to the software side as it launched its own migration path to the XA (extended architecture) operating system.

And the company is offering what it claims are significant advantages in time and cost to users converting to IBM's new major operating system on S/390 and 470/XA, the plug compatible company's new software offerings.

David Wildman, south of England sales manager, said: "Typical conversion times to XA will be around 12 months. Our Sunovale team has already run extensive work on our own S/390."

Amdahl also announced three hardware releases: the entry level 5840 processor with a 3.5 to 6.5 mips capacity, a new high speed floating point feature and a hardware monitor strachment facility.

But it is saving its big guns for

its software conversion products and is offering a conversion team to help users make the move to XA. Peter Whalley, manager of the 100 strong UK consultancy division, said: "We have been finding at our customer sites that the biggest single selling point is conversion to XA. A significant number of users are planning to make the move."

The specific advantages that Amdahl claims over IBM's conversion aid are that its system allows two separate environments to run on a uniprocessor while IBM requires MVS/370 and MVS/XA to run on the separate sides of a dyadic processor and that I/O processing in one mode does not have to be emulated by the other.

And the user can vary the amount of storage and CPU time allocated to each mode. This will be an advantage in that the early stages of conversion most work will be relatively low priority

testing of XA, whereas it will be predominantly applications work in the later stages of the conversion.

Amdahl claims that its system will prevent failures across the two environments and that I/O interrupts in one will not hold up work in the other environment even though the system is run on a uniprocessor.

Continuing its new emphasis on software, Amdahl is promising its 470 customers that XA will extend the useful life of their systems and is pointing to the fact that it opened a separate manufacturing plant for 470 processors in California in January of this year.

Delivery dates for both forms of XA are the second quarter of 1984. The S/390/XA conversion aid feature will be available in the following quarter. From the beginning of next year 5860 users will be able to attach and use 64 megabytes of main memory.



JOHN (left) and FITZPATRICK... hoping for a million.

CPU hopes for a million from shares

by Philip Hunter
CPU COMPUTERS hopes to blaze the acquisition trail and extend its network of franchises with the £1 million it will raise by going public next week with 30% of its shares.

The company has offered 4.5 million shares for tender at a minimum price of 105 pence, but most of the proceeds will go to the two joint managing directors, Tom Fitzpatrick and David Johns, who are cashing in on some of their existing holdings, but retaining 60% control.

Few of the shares are likely to become available to the general investing public when dealings commence on the Unlisted Securities Market on June 29. Most of them will probably be snapped up by big institutional investors eager to pick up shares in a fast-growing profitable computer company.

Sales were £9.6 million, up at 250% of 1982's £3.8 million, and profits rose from £559,000 to £912,000, giving the company's issuing brokers a healthy profile to sell the shares.

Part of the reason for the sudden lurch forward was that recently purchased subsidiary Synelec, which distributes manufacturing control systems, made its first group contribution of £2.4 million.

Also the LSI division doubled its turnover from £1.6 million to £3.2 million, largely through sales of the M2 and M3 business workstations.

The LSI division shared the design of a personal computer to match the IBM PC with Computer Ancillaries (Cali). Deliveries began in February 1982, and a recent order for 3,000 was taken by LSI, which now builds the machine for CAL. The end user price is £2,000.

Estimated success of the IBM look-alike is part of the reason for this year's £1.35 million profit forecast. The company also expects the M4 eight- and 16-bit computer to bring money home after closing LSI's growth during the first three months of this year after the launch.

Financial director John Penrose says that profits early this year have been hit by the cost of sending up 12 UK franchises to distribute the LSI machines.

Nevertheless, CPU intends to spend part of the money raised by selling shares to bring in about 12 more franchises. That means you can sell complete systems with your own label without having to produce all the software, says Penrose.

SALES BRIEF

Wang wins orders for over £1m

WANG, the US office systems giant, last week announced the UK orders worth over a million pounds. The latest £1,000,000 deal with SBC Micro Harlow, Essex, for delivery of 16-bit Professional Computer over the next year. Leading cosmetics distributor Avon has installed a Wang VS100 computer system for £420,000, and a subsidiary of Grand Metropolitan Hotels has taken Office Automation Product the Alliance 250 for £170,000.

Nixdorf order

GERMAN computer maker Nixdorf has sold an \$8701 computer Jurid, the UK importer of bus components for cars and buses. The company will use the computer for the standard accounting applications previously taken care of by a bureau service.

Bocs' biggest

HONG Kong is computing its coterialments and sports deals with the UK box office synd Bocs in a £600,000 deal. It is the biggest sale so far for Bocs, developed by Space Time Systems of London.

Grafftek sells

UK distributor Engineering Computer Services has taken orders worth over £500,000 in the month for computer aided design and manufacturing system desk, which it markets in the UK. The largest of these orders was for £150,000 from a Midlands pot-maker, and includes the Optimal software for moulding plants.

Texas buys

TEXAS Instruments has bought £250,000 worth of Winchester drives made by Fujitsu, Japan's biggest computer maker in the last three months. The drives are supplied by the Cambridge-based subsidiary of Geest.

Deals extend

TWO foreign micro makers have extended marketing deals with Micropro, the Hong Kong developer of business software for micro. Sanyo Business Systems has extended an agreement to offer Micropro's entire software collection on its M-4 and eight-bit machines, and Franklin Computer Corporation will likewise continue to sell the software on its Ace computer.

Build on NCR

TWO NCR mainframes have been ordered by Midlands-based house builder, William Higgs, for £100,000. One of the computers will be used for financial control work, the other for surveying.

MIS is game

MONOPOLY maker Waddington Games of Leeds has chosen Reality minicomputer for stock and accounting applications. Both software and hardware were developed and supplied by Microdata Information Systems and cost was £169,000.

THF signs

INTERNATIONAL hotel group Trust Houses Forte has signed a deal worth £500,000 with THF for a reservation system based on the Microframe system. Over 100 hotels will have the equipment which gives guests automatic confirmation of booking, and saves time at the reception desk.

Police talk

HARRIS has won one of the largest orders worth £1 million for a network of private branch exchanges (PBX) at 30 police stations in the South Wales area. There will be 100 PBXs and four large ones.

THE TIGER FROM HH



The Right Product at the Right Price

The TIGER is the most unique and powerful microcomputer in its price range, exceeding the capabilities of any other micro in its class.

Designed for ease of use, convenience and to a price, TIGER will perform for a one person office, small to medium size business operations, and with its versatility and flexibility, the TIGER is ideal also for the large corporate user.

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Look at the TIGER specification. Impressive? Yes! But, all these features count for nothing unless you have reliable software, good documentation and the right level of professional support. TIGERBYTE® software includes Peachtree - one of the world's biggest and most experienced software specialists. In addition to these basic accounting and office productivity programs, TIGERBYTE® provides proven communications and graphics software. With excellent documentation and nationwide service back-up, HH provide the dealer with total product and support.

Designed for the Market

The TIGER was designed with the user in mind. Apart from its obvious aesthetically pleasing appearance and excellent use of ergonomics, the TIGER performs. The price and

performance meets the needs of the smaller business but, because of its built-in modem, with the capability of access to Prestel, the TIGER is a powerful communications tool. Comprehensive interfacing ports mean TIGER can support advanced data communications to other terminals, microcomputers, and large corporate mainframes. With outstanding colour graphics, the TIGER is a compelling selling proposition.

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The TIGER comes from a well established British company renowned for its high quality electronics and marketing skills. We have an impressive list of clients worldwide supported by over 800 dealers in 48 countries. We'll be here tomorrow.

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The TIGER's design is based on a combination of some of the most advanced microprocessors available, providing significantly better performance than any other micro in its price class, so it won't be obsolete tomorrow.

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Innovation, quality and service. That's HH. We are now looking for the best 100 dealers in Britain. That could be you. Contact HH now for a dealer pack.

THE COMPLETE TIGER DESKTOP SYSTEM - £2,795 (R.R.P.)*

*End-user enquiries welcomed



HH is a registered trademark. *Price includes hardware and systems software only (excl. VAT).

Prime joins Convergent list

by John Kavanagh
PRIME Computer has joined the list of hi-name companies buying workstations from the young US manufacturer Convergent Technologies.

Prime has launched the Convergent Technologies microcomputer as the Producer 100 workstation in its OAS office automation system. The launch comes just as OAS sales are taking off. Prime has sold as many OAS systems in the first three months of this year as in the whole of 1982.

The Producer 100 will eventually replace the original OAS workstation, an intelligent terminal, with a microcomputer which can run as a self-contained system with its own floppy or hard disc.

Software for local processing includes Convergent Technologies' word processing package, enhanced by Prime, plus Microsoft's Multiplan financial planning system. Prime has adapted Convergent Technologies' CTOS operating system to run Multiplan.

Prime's emphasis is on the Producer 100 as part of the OAS system rather than as a self-contained microcomputer. The OAS software running on a Prime minicomputer has been adapted to handle central document processing and electronic mail from the workstations.

"We're not changing our stance as far as mini versus micros is concerned," said Prime's UK commercial and office systems marketing manager, Alan Jeffries. "The Producer is not meant as a standalone machine but it does give us more local functions and storage."

Jeffries added that worldwide OAS customers now run into hundreds. "The system was ahead of its time when we launched it in 1980," he said. "But the market is now realising that it's OK to start with standalone word processing but that you need communications too. Sales will take many years to peak and the system could see us into the nineties."

Other firms which have adopted the Convergent Technologies product include Burroughs, NCR, Computer Technology in the UK and Thomson CSF in France.

In two years the company has grown to sales of \$96 million - yet it only has 18 sales staff worldwide. All its products are sold through third parties.

Jeffries... New macro does not mean a change in stance.

Philips changes the German guard

by Ivan Berenski

HAVING headed the Philips Communications Industrie AG group, which incorporates Philips Data Systems, as chairman of the board in Slegen/Nuremberg, West Germany for more than a year, Dr Michael Hoffmann is to leave the Philips fold on June 30 and will be replaced by Dr Markus Rauh.

Dr Hoffmann, 58, who had headed Nixdorf Computer's magnetic disc division in Paderborn and was Kleinfelder's marketing supremo for two years prior to the Nuremberg appointment, claims that the parting of ways with Philips is a friendly one, "based on a mutual agreement to differ about ways of running Kommunikations Industrie AG".

But the views filtering out of

Philips' corporate HQ in Bielefeld and broadly quoted in the West German press strike a different note. Hoffmann is alleged to have "come on too strongly from the start, 'gambled too aggressively' with product and staff decisions and upset many with his 'entrepreneurial' abrasive approach."

The evidence shows that it is the attributes due to which Dr Hoffmann had been hired as a trouble-shooter from the outside that were to cause his downfall, to be labelled now as shortcomings by the traditionalist Philips top echelon in Bielefeld, most of whom had resented the very idea of bringing an outsider into the close-knit Philips firmament for stimulating a troubled subsidiary.

Sintrom heads for a boom

by Nuala Moran
THE UK-based manufacturing and marketing group Sintrom is heading for a boom year.

According to managing director Tom Dalzell, turnover will reach £11 million in 1983, up more than £3 million from just under £8 million in 1982. Turnover in 1981 was £4 million.

The company has three divisions, Sintrom Electronics which

is the distribution arm, Perex Limited which manufactures peripherals, and Sintrom BIIHox which sells to OEMs.

Sintrom Electronics, which will be 15 years old in July, started life in Dalzell's garage. It was set up to represent US computer peripherals companies in the UK and now represents Able Computers, Data Products, Hewlett-Packard, Micropolis and others.

Professional users get a forum

by John Kavanagh

END users ranging from accountants to engineers are to get a forum for the exchange of computing experiences with each other and with data processing professionals.

The new Institute of Information Processing is being formed by the Institute of Data Processing Management (IDPM). The IDPM is also setting up the Institute for the Management of Information Systems as an umbrella organisation under which the new end users' institute and the IDPM will operate.

"For too long DP professionals have seen users as people they give systems to," said IDPM secretary-general The Cliff. "But that relationship must change with the spread of software development tools, micros and distributed data processing."

"DP people must see their users as fellow professionals in their own fields. They must air down with them as equals and help them develop their own systems and work out operating procedures and so on."

"The users need this help and the Institute because micro users in particular can get into very serious problems. They don't understand simple things like the need for file backup."

University offshoot gets £25,000

by Claire Gooding

THE offshoot of Bradford University set up a year ago to sell software has been granted £25,000 from the British Technology Group. More government money is going to another Yorkshire firm, Electronic Automation in Hull, which specialises in automation and robot systems, bringing the BTG's latest handout to £70,000 in all.

Bradford University Software Services Ltd grew out of a thriving research arm in the University Computer Department. The graphics product Simpleplot, written by Bradford University Research programmer Judy Bayland, was one of the first products to earn money for the company and has found its way on to a range of hardware including DEC kit and ICL's Perq system.

According to chairman Laurence West the money will be spent on increasing the team of two people to five full-time staff.

"We became self-sufficient last year but the time has come to put the company on a firmer basis, and we didn't have the resources to expand by ourselves," explained West.

BTG's money will go in salaries and moving the company to new premises, still within the University campus, where the company will

invested £40,000 from individuals at £500 to match the £25,000 from BTG, and West is confident that revenues will increase significantly.

"We seem to have got our timing" said West. "Simpleplot has been rewritten to run on a range of micros, and it has been adapted for business use rather than just scientific and technical applications."

The product has just been launched on Tektronix kit, and already runs on Apple and IBM micros.

Information technology related products have won £2.5 million from the European Commission, but the companies involved won't get one penny of the cash.

British Telecom projects to install digital exchange and switching systems in Belfast and optical fibre transmission routes in Co. Antrim won £2.47 million, and Computer Metalwork Company of Lisburn, Co. Antrim, won £38,200 for making cabinets and desks.

However, the money awarded for the projects does not go to the companies but to a central pool for government use within the region for unrelated purposes.

An EEC official agreed that the procedure could be considered ridiculous. "But that's how it's done," he said.

Retailers back Acorn in fair trade probe

by John Kavanagh
MICROCOMPUTER retailers are up in arms over the Office of Fair Trading's investigation of UK manufacturer Acorn Computers.

The Computer Retailers' Association has written to pledge full support for Acorn in its intention to fight the issue to the end. But the company's dealers are lining up to support the Office of Fair Trading.

The Office of Fair Trading is looking into a complaint from a supplier which wanted to buy Acorn BBC microcomputers from an official dealer. The dealer refused because Acorn said it might cut off dealers which sold its products on to other outlets. The company argued that it had to have full control of its end user sales.

ing offering to give evidence on Acorn's behalf.

"A lot of damage is being done by cowboys, many of which are approved dealers of the manufacturer," he said. "If this can happen among approved dealers, what damage there would be if the market was opened up to anyone."

But Gary Wilkin, technical director at official Acorn dealer Microcentre, is offering his support to the Office of Fair Trading (see Letters, page 13).

"If Acorn is so worried about support for users it should look at its own standards for dealing with its dealers," he said.

Wilkin and others knew of several cases of unofficial dealers selling Acorns. "If Acorn is publicly proclaiming to the Office of Fair Trading that it acts in the interests of the market, how does it account for these people getting the machines?" Wilkin said.

One dealer which preferred to remain nameless questioned the role of Leasalink, Acorn's main distributor to the trade. "Before we became an official dealer we simply rang them up and they offered us machines without investigating our background and standing," said the company's sales manager.

Acorn said it was "perfectly satisfied" with Leasalink. "Leasalink gives us information on dealers before appointing them," the company said.

"We are aware there is some selling by dealers to non-dealers, but there is little we can do about it. We believe a well-educated market will determine which good dealers survive."

Another south coast dealer, CJE, said one problem was the easy availability of upgrade kits for the basic Model A BBC microcomputer to turn it into the Model B. Models A and B could be bought through shops and the official distributor, Vector Marketing, while upgrade kits could be got from several suppliers.

Companies could do the upgrades and sell the resultant Model Bs with a reasonable profit margin, said CJE owner Chris Evans. "The unofficial dealer problem wouldn't arise if there was a proper discussion on the products in the first place," he said. The margin on Model B bought from Leasalink at a rate of 700 a month was just over 12%.

Because of the low margins, some dealers were selling to unauthorised dealers merely to increase their orders to Acorn and thus get bigger discounts, he suggested.

Acorn said it was refusing to sell Model As in large numbers to dealers and was phasing the model out. It was also reviewing the margins and discounts on the products.

The company added that, despite the complaints, all its products were selling very well through dealers and there was a long list of other companies wishing to become dealers.

At the same time, the range of equipment the society makes available to subscribers to access the service is to be enlarged to include all the microcomputer interfaces belong built for IBM's Micronet 800 telecommunication service on Prestel, as well as a 16 Kbyte Sinclair Spectrum complete with interface and a new model of television adaptor from Tandata.

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Capitalist pays for university fellowship

by John Kavanagh
VENTURE capitalist specialist Sir Richards has donated a six figure sum to create a management studies fellowship at Oxford University's Balliol College this month. It is believed to be the first fellowship specialising in management at any university.

Richards acted because he believes UK universities must realise that the study of modern sciences such as management is just as important as knowledge of social sciences.

Richards, head of several UK high-technology firms, has donated the sum to establish the fellowship and his gesture has been matched by others.

An equal sum has come from the Foundation of Management Education, which has given over £1 million to help set up centres such as the London and Manchester Business Schools.

"Most management is done by the seat of the pants or through natural flair," Richards said. "But it is a science that can be taught to a certain level."

"Other universities follow Oxbridge. So until Oxbridge blesses management studies, this country will not achieve its full potential."

The first fellow is Bill Weinstein, who has been Balliol fellow and tutor in politics for 20 years.

He said the college hoped to extend management studies into a full undergraduate course, alongside subjects such as engineering and economics.

Richards runs his own venture capital and investment company in the City and he has held top jobs in the Rothschild group. He is chairman of main shareholders group, Micro Systems Systems group, components firms United Components and Vako and Norris Hill, which is involved in the computer-aided design and manufacturing business.

The fellowship is named after the Foundation of Management Education, and Richards' father, a businessman and entrepreneur in the metals market and one of the inventors of chromium plating techniques.

Foster gets ACT together with 272% profit boost

by Philip Hunter
APPLIED Computer Techniques (ACT) is booming with better than expected sales figures and new products. Managing director Roger Foster has reported turnover up 272% from £8.4 million to £22.8 million for the year ended March 1983.

Soaring sales of the company's Sirius 16-bit micro, now running at 1,200 a month, are the main source of the success, and account for half the year's profits of £2.1 million, more than double the 1982 figure.

ACT's bureau also did modestly well against the national trend to in-house computing and turned over £3.3 million, slightly more than last year.

The two bureaux in Birmingham and Bristol pulled in 50 new customers worth about £40,000 a year from software to operate the government's statutory sick pay scheme.

Another bonanza year looks likely, with industry analysts predicting a further doubling of profit and turnover. The company next week launches its sequel to the Sirius - a portable micro



FOSTER... Profits top £2m.

called Apricot to attack the market until now led by Osborne.

The Apricot will have a similar processor to the Sirius, but to make it portable will have a much smaller disc capacity based on Sony's 320K discs.

Unlike the Osborne, the Apricot will rely on mains electricity, but this will make it lighter. It also has a bigger 910 screen, rather than Osborne's much criticised 5in. The prize will be about £1,000.

ACT will also soon announce an oo-board modem for the Sirius to allow it to communicate with a wider range of other machines. In July, the company will herald a move into electronic mail with the first of a series of seminars.

Undeterred NCC plans D-11 sale

by Claire Gooding
THE National Computing Centre is to sell the D-11 language from Ace Microsystems to DEC PDP-11 and Vax users from July despite the language's legally murky future. The decision table language is the cause of a bitter dispute between Ace Microsystems and Filetab Support Services (FSS), which has started a High Court action against Ace over the product.

"We are taking action against Ace Microsystems over two products, the Lex 11 word processor and the D language," explained Margaret McGladdery, marketing director of Filetab Support Services. "We are claiming that the copyright and licence of our Rapid Programming Language RPL-11 is infringed by D-11."

And according to managing director Ritchie McGladdery, parts of RPL software were used in the D compiler, as well as in Lex-11, which uses D.

Tom Barnard, managing director of Ace Microsystems was closely involved in the original development of RPL, which took place at Airfix in the mid-1970s. FSS bought the rights to RPL shortly before Airfix went into liquidation in 1980.

Barnard says that his D language is not related to RPL, and is counter-claiming in the High Court that his still owed royalties from FSS sales of RPL. He was never an employee of FSS, but has worked as a consultant when he worked on RPL for Airfix, FSS, and later, for the NCC.

Action and counter-action is further complicated by another row between McGladdery and the NCC. FSS is suing NCC for non-payment of royalties on overseas sales of NCC's Userlab and FSS, originally implemented by FSS and Barnard.

The dispute arose when McGladdery lost the agency for the products. NCC is considering counter-action.

The NCC is cautious about the lawsuits, but suggested that in the past such actions had achieved little positive gain: DEC was rumoured to have been on the verge of a huge deal with FSS but pulled out when news of the Ace Microsystems court case broke.



Ritchie McGladdery... Action against Ace.

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Barnard's D was announced at Compex last November after FSS had failed to get an injunction to stop the launch. While the writs shuttle back and forth between NCC, FSS and Ace, Barnard is kept busy by further enhancements on D, which he says is already "better than RPL". He is using D to port Lex-11 on to the up and coming 16- and 32-bit processors, including the 8686 family, the MC68000-based Wicat under Unix, and Perkin-Elmer's 3200.

Home banking and shopping service to go nationwide soon

by Donald Kennett
NOTTINGHAM Building Society is to launch its Homelink Prestel-based home banking and shopping service nationwide. Last week it started a two-week test marketing exercise in London and the South-east, with advertisements running daily in the Daily Mail, Express and Standard, and 24 times a day on the two London radio stations.

At the same time, the range of equipment the society makes available to subscribers to access the service is to be enlarged to include all the microcomputer interfaces belong built for IBM's Micronet 800 telecommunication service on Prestel, as well as a 16 Kbyte Sinclair Spectrum complete with interface and a new model of television adaptor from Tandata.

The equipment is supplied at rates subsidised according to how much the subscriber has on deposit at the NBS, and NBS managing director John Webster said last week that the qualifying deposit had been lowered as planned, to coincide with the expansion programme.

The previous qualifying deposit of £10,000, which entitled the subscriber to free equipment and use of the service, is now down to £4,000 - except for subscribers who choose the Spectrum, who pay 60p a week.

Subscribers with £1,000 on deposit pay £1.20 a week for a Spectrum, 60p a week for a Tandata Td1400 and 15p a week to use the Homelink service if they buy their own viewdata terminal.

Webster would not reveal how many terminals had been installed since December when the service went on offer in Nottingham and Birmingham to depositors with £10,000 in their accounts. "Our competitors would just love to find that out," he said. The aim is to have 100,000 subscribers by 1986.

"But the service itself is mind-blowing," he added.

Last week the first competition was run with a prize of £50 from the Homelink promotion budget. The aim is to build up to a top prize of £1,000 a month with smaller prizes another £1,000.

Home shopping facilities include being able to order wine at 14% off retail from a local Nottingham wine merchant whose goods are delivered nationwide.

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French wait for Transpac

by Jack Geo
DEMAND for connections with Transpac, France's packet-switched data network, are growing so fast that new subscribers are being told they must wait for six months, particularly on the Riviera and in other areas where small businesses are busily installing computer terminals.

At present 10,400 subscribers have direct access to Transpac and 1,000 others via the telephone and telex networks. But the target for the next two years is 30,000 with the French Telecommunications Ministry, 100 per cent owner of Transpac, planning 100,000 connections for 1990.

French Telecom is investing 300 million francs (£24 million) this year and 2,000 billion francs (£160 million) up to the end of the decade to extend Transpac.

However, as the French government cuts back on state investment in the framework of its austerity programme, the development of local area networks of Transpac must be financed by subscribers.

Mexandreu's orders set a serious challenge for Transpac's chairman, Yvon Lebars, whose turnover has grown sevenfold over the past four years. Last year it reached 150 million francs (£12 million) and is expected to exceed one billion francs (£80 million) in 1986.

Transpac is playing a key role in the development of Teletex, France's interactive videotex network, with special emphasis on the electronic telephone directory whose terminals will be installed in over 500,000 homes and offices next year.

Transpac will also be highlighted at Biarritz.

Telecom Minister Mexandreu, who will soon make the book up of France's 20 million telephone subscribers, line and 100,000 telex connections, said: "It shall be increasingly concerned with the development of local area networks."

France frets over its trade deficit

by Jack Gec
FRANCE'S computer components industry is voicing increasing concern about the deterioration of its trading balance. The concern comes as the socialist government puts the finishing touches to a new three-year components plan to follow the 1979-1982 plan enforced by President Valéry Giscard d'Estaing.

The Active and Passive Components Manufacturers Associations report that exports of electronics and computer components covered only 74% of imports in 1982 compared with 102% in 1980 and 88% in 1981.

The French passive components industry, which provides 33,800 jobs compared with only 3,500 for integrated circuits, is in particularly serious straits. Its workforce has fallen from a level of 41,500 in 1974.

The decline of the industry is handicapping French manufacturers of computer and electronics equipment. They are reluctant to

embark on new products without the guarantee of components from national sources to back up shipments from foreign suppliers.

The French Component Manufacturers Associations recognise that they are losing ground steadily to the Americans, Japanese and their own Common Market neighbours in the development of multiwafer printed circuits, ceramic condensers and hybrids.

Over the past few years France has lost the lead which it had established in the early 1970s in small, costly, high-technology components for military and other specialised uses.

In spite of complaints from French industry of unfair competition by Japan, the big challenge lies in the Common Market. Last year French expenditure on resistance totalled 28 million francs (£2.2 million) for Far Eastern suppliers and 240 million francs (£20 million) for the European community.

West Germany alone delivered

67.7 million francs (£5.5 million) and the US 78 million francs (£6.2 million) of these components.

For fixed condensers the French turned to the Far East generally for 50 million francs (£4 million) of deliveries and 310 million francs (£24 million) from the Common Market.

In spite of French manufacturers' complaints about cheap labour in Asia, the main effect of Far Eastern competition has not been to create intolerable marketing conditions but to whittle away French margins, discouraging manufacturers from building automated production lines.

No French company has copied Japan's IDS firm in investing £2.4 million in an automated factory to turn out 10 million condensers a month with only 45 workers.

A French manufacturers' spokesman said: "We could not imagine this in France. To produce half as much as the Japanese we would have to hire 120 workers."



DENNIS... "Bottle in low end."

Data General does a 32-bit retake

by John Riley
WITH its 32-bit shop window revamped last week, Data General is all set to tackle the lower end of the mini-market.

Following a battery of hard and software enhancements for its 32-bit users, which have resulted in the obsolescence of the MV6000 minicomputer and 45% reductions in main memory prices, Data General is keen to reassure its low end users.

Gordon Dennis, European marketing manager, Information Systems Division, said last week that the company is developing low end small scale office automation products which will be compatible with its Comprehensive Electronic Office. The announcement of the products, known internally as the "Box Series", is expected very soon.

"It is my personal view that minis will gravitate to 32-bit architecture but there is still a lot of bottle in the low end," said Dennis, "and it will be a long time before the last Nova is shipped out."

Prominent in the releases last week was the middle-range MV8000 II minicomputer, which is a repackaged MV8000 with the same performance, but priced in the region of an MV6000. The MV8000 will not be replaced as customers are opting for bigger low end MV4000 configurations to reach the performance covered by the MV6000. The company claims to have sold 75 MV4000s in seven months in the UK.

The 45% price reduction in main memory prices will result in savings of about £6,000 for the average upgrade of two Mbytes of memory, ranging between 10% and 20% less for the total system cost, depending on system size.

Other hardware enhancements included new 354 Mbyte and 1.6 Gbyte disc drives and a series of DIN standard terminals. In the wake of the Wang document interchange facility for Data General's CEO announced last April, two new software products were released to two IBM users.

The first is an IBM PC emulator to make the PC appear as a CEO workstation, and the second is another SNA software module which allows Data General users to work with APL programs running on an IBM system.

Data General has now joined the Department of Trade and Industry's pilot scheme for office automation. The Home Office recently bought a CEO system to run on its MV6000 machine, and Data General aims to attract the police force to the CEO by giving it head-on experience on that system.

Data General's CEO strategy is moving down to a broader base, Dennis explained: "Our first target was banks, and then manufacturing industry. Now we are broadening out to education and the scientific community, although still to large organisations and multinationals. In the past two years the threshold will come down to smaller companies."

Plexus steals Unix march over rivals

by Claire Gooding
SUPERMINI manufacturer Plexus is stealing a march on competitors by offering one of the first applications generators under Unix.

Plexus has signed an agreement with Texas firm Software Express to offer the Appgen generator to its users and OEMs.

Plexus has also linked IBM's PC into its recently announced Unix-based Ethernet Local Area Network. This will enable PCs to act as single-user stations on the multi-user Unix network.

Plexus claims that the Appgen will allow users to produce custom-built applications in one-third of the time usually taken.

Richard Schmoeckel, president of Software Express, is cautious about making ambitious claims for his generator: "It doesn't eliminate programming entirely, and you still need to design programs well," he said.

As attractive to Plexus as the generator itself is the fact that Software Express also offers general accounting applications and a series of "vertical market" packages

which can be adapted to specific needs through Appgen. The shortage of applications under Unix, and the lack of an applications generator despite much work on Unix systems, has forced Plexus to look outside the Unix fold.

Appgen and its associated products have their roots not in Unix but in the Pick operating system. Schmoeckel designed the generator so that it would adapt easily to other programming environments and recently announced a "window" into Unix which would make it possible to transport Pick-based applications into Unix machines.

Appgen is similar to most applications generators in that it starts with data and creates applications by giving users access to change, delete or make selective reports on the data they enter through the screen. The system relies heavily on menus, which users can change or adapt to their own needs.

Software marketing firm Sphinx, which specialises in Unix applications, is also negotiating with Schmoeckel for the use of Appgen.

STC man is shot on holiday

by Donald Kennett
JOHN Smith, managing director of STC Telecommunications, was shot dead while on holiday in Kenya last week.

Smith, aged 53, took over as managing director after a reorganisation in February in which the former STC Telecommunications & Electronics, headed by Jeffrey Samson, was split into three separate companies for telecommunications, business systems and submarine cables. He had previously been a main board director for switching and transmission since 1979.

Smith was travelling in the last of a group of three minibuses on their way back to Nairobi after a visit to Mount Kenya game reserve when they were sprayed with bullets by gunmen standing in the



SMITH... Shot in Kenya.

SOFTWARE FILE



GEISLER... Keeping contact with Silicon Valley.

Sphinx acts as Bridge for US network hardware

by Donald Kennett
NEWLY LAUNCHED software marketing company Sphinx has signed an exclusive UK marketing deal for networking hardware made by US-based Bridge Communications.

Managing director Pamela Geisler said that Sphinx would eventually be an integrator of hardware and software products for specialised markets, as well as a software marketing and sales organisation.

Bridge's high performance switching and interfacing devices would be a key element in the kind of service it aimed to offer, she said.

Sphinx will also act as agent and support organisation for deals between Bridge and specialist UK systems houses and network suppliers.

These are expected to handle the bulk of the Bridge products coming into the UK, with Sphinx taking a commission on the deal it lines up for Bridge.

One potential deal the two are co-operating on is with GEC-Marconi for boxes to interface Ethernet local area networks to Marconi's satellite earth station. The boxes are based on Bridge's GS/2 gateway server, which US systems house Vitalink has customised to handle the specialised signals used with satellite modems.

Bridge uses Intel Multibus standards in the construction of its boxes, which makes it easy for other companies to build on its basic hardware, while the software running on the multiple 68000 based Bridge processors is designed to be configured interactively for links to any type of outside system.

Bridge Communications founder and president Bill Carrico developed Z-Net for Zilog, before leaving two years ago to set up his own company specialising in high-performance local area networks.

He got to know Geisler when, as Zilog's UK marketing manager, he launched Z-Net here.

The first three products to be sold under the agreement are the GS/1 communications server, which links up to 32 dumb peripherals or computer ports to an Ethernet or GS/2 gateway server, which connects one Ethernet to another across an X25 public data network; and the GS/2 gateway server, which is designed to be connected for different types of point-to-point links using media such as optical fibre, microwave radio or leased telephone lines.

Another gateway server, the GS/3, is being developed under an agreement with Syntex to link its LocalNet broadband local area network to the Ethernet baseband network.

UK coins the dollars with PC generator

by Claire Gooding
AN applications generator for IBM's Personal Computer which was developed in the UK with British money is set to become a winner in the US. Tomorrow's Office, backed by funds from the British Technology Group, received its official launch in the UK last week from its originators SoSoft.

The company has negotiated a £250,000 deal for with North American distributor Professional Software.

SoSoft's sister company, Stage One, already has a large user base

in the US for its Commodore software products. "The quality of Tomorrow's Office and the level of support provided through ourselves and Professional Software means we're in a good position to make volume sales in the US," said Margaret Griffiths, SoSoft managing director.

Tomorrow's Office is ambitiously aimed at inexperienced end users, and already has a 16-bit following on the Sirius and Vector machines. Its availability on the IBM PC is the opening to volume sales in the UK and abroad.

Development was funded

Scope for investment in North Sea oil and gas

FORMER BOC subsidiary Triad Computing Systems, now independent, has come up with a software package for evaluating investment in North Sea oil and gas.

Triad, which bought its independence from BOC in the spring, supplies mainly turnkey systems for the City and the oil industry. Its new product has been developed for stockbrokers Scott,

Goff, Hancock who now own the marketing rights.

SGH partner and head of research Paul Clifton says the system, called Scope, has already had good results, and had predicted government revenues from the North Sea more accurately than the Treasury forecast.

"It could become an industry standard, it certainly has the tech-



GRIFFITHS... taking a quantum leap with Tomorrow's Office.

largely by the British Technology Group, which gave SoSoft a substantial grant in 1982. If Tomorrow's Office carries out the place for itself being predicted by its vendors and industry observers, it will be one of the few software products so far backed by the BTG to make good, and the first out of BTG's Small Companies Division.

"This company is taking a quantum leap," said Bari Goodwin, of BTG's Small Companies Division. "They're taking a tremendous risk, and so are we."

"We looked at the people and the success they'd had with Petaid, and decided it was worth granting them enough to give them sufficient punch in the market."

The product is an applications generator which, like so many before it, aims to give the end user with no DP experience the means to develop custom-built applications.

"At the moment there are few well-known competitors," said Griffiths.

the North Sea in the last few years, but systems houses are getting ready for a revival soon.

Another organisation much involved in the area is BP subsidiary Scicon, which has just introduced a system to help ensure the stability of oil platforms. No weight control management system gives engineers access to data on weight distribution.

Productivity analysis is 'stuck in 17th century'

BIG corporations are being prevented from investing in office automation because they don't know how to measure improvements in productivity.

This was the message at Rank Xerox vice-president Paul Strassman, at a conference on office automation in London last week.

He said much money was being misdirected because those in most need were failing to make out a case for the new equipment.

In one retail store which they had studied cash was given to the finance department because it had produced figures to justify it, whereas it was the purchasing department that really needed it.

"Allocation of money to office automation is often done on an arbitrary basis," he said.

The main difficulty was in assessing productivity changes. Staff did not resist innovation but welcomed it; the problem was with management, not staff.

Measuring productivity had proved perplexing and troublesome. The result was that bringing new electronic gear into offices had turned out to be a much tougher proposition than anyone had ever thought.

All government agencies and most large companies continued to assess productivity in simple terms of man-hours spent, which was "total nonsense," he argued.

Most current productivity analysis was still stuck with 17th century notions, stemming from Adam Smith's "Wealth of Nations".

ICL bows to its reject

by Claire Gooding
A LEICESTER software house which "just wasn't big enough" to qualify for ICL's Business 29 scheme, is now selling its resource allocation package worldwide through ICL.

D&D Associates, a small software house which relies heavily on ICL's Business 29, developed the General Analyser package for its own customers. It seemed an ideal candidate for the Business 29 scheme, which ICL launched in April to encourage software houses to commit themselves to the ME29 market.

But D&D Associates was refused entry to the scheme, which numbers a dozen or so large software houses.

"The impression we got was that we weren't big enough to interest ICL," explained Dennis

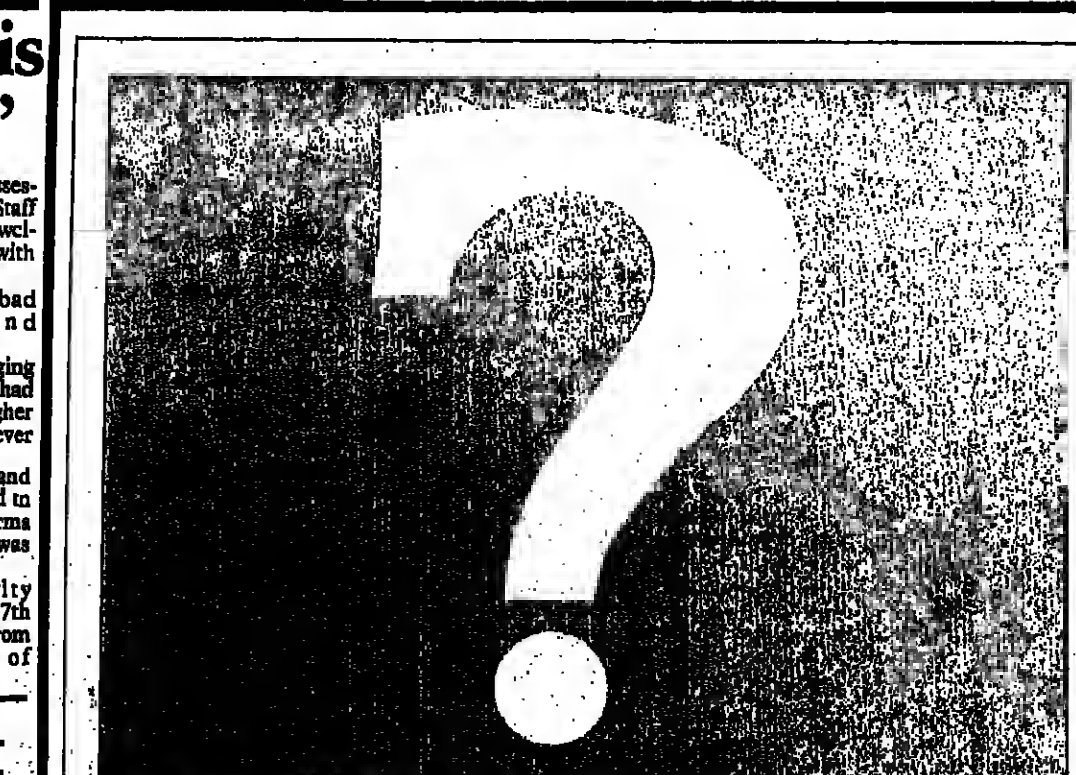
Anstee, a partner in D&D Associates. "What happened was that ICL came across a customer request that they couldn't fulfil and came to us. Now we're getting enquiries from all over the world, including ICL, Singapore."

Anstee describes the General Analyser as "unique in its field". It already has 10 users in the UK.

ICL's role in selling General Analyser was described by D&D as "informal". No one at ICL could confirm whether there was any sort of agreement to sell the product outside the Business 29 fold.

Possibly at £1,500 the product is below the price range which ICL originally identified for Business 29.

But D&D's experience now raises more questions on who is qualified to join the scheme.



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HANLEY... "I don't believe in salesmen who survive on personality."

The classic tale of the salesman-made-good

THE career history of Brian Hanley is not exactly the rags to riches of fairy stories, but it is a classic tale of salesman-made-good.

Hanley is good at selling - he's been in the business for the last 20 years. It all started in 1963 when he joined Oliver, becoming one of the company's top salesmen.

Six years later, in 1969, Hanley went to work for Honeywell. After one year he was top UK salesman. By the end of his second year he had moved into the management of sales in medium and small scale systems.

He was stuck in the middle management for the next 14 years, emerging only after much persuasion to join Perkin-Elmer. By then he already had his Rolls Royce and could claim to have made it.

He says that he was so happy at Honeywell that P-E's overtures led to sleepless nights. In the end P-E prevailed and Hanley accepted the offer of a job as UK national sales and marketing manager last September.

By the time he left Honeywell, his cumulative business tally was a massive £84 million.

Theo In May this year Hanley was appointed general manager of UK operations at P-E. "I never expected such a move after such a short time. I would have been quite happy to be sales manager for the next two years, but the vacancy arose," he said.

Since he joined Perkin-Elmer the UK division has risen from fifth to first in the P-E International league table.

As part of his strategy Hanley devised the partnership plan through which he hopes to win volume sales in the OEM market. The plan offers OEMs discount on hardware, support and training, a

50% contribution to advertising costs and the provision of sales leads.

The deal was instituted in the UK at the end of March. Now it is to be adopted as a major plank of sales operations in Europe and the US. Hanley is pleased that he came up with this strategy at a time when other manufacturers decided to turn their attention to the end user market.

It should not be thought, however, that in devising the partnership plan to sign up OEMs Hanley has decided to abandon the direct sales force. P-E will retain its force of about 20 to sell direct to end users. It will be reserved for selling to "sophisticated end users who have their own development staff," he said.

To encourage P-E's salesmen to emulate his drive Hanley placed the sales commission to the highest levels in the industry. His objective, as it has been throughout his

by Nuala Moran

career, is to get every salesman performing beyond quota. "If you have one or two salesmen over target they've done it. But if as a manager you can get all salesmen performing beyond quota you can say you've done it."

Having spent so long in sales himself, Hanley has a clear idea of what makes a good salesman. "IBM is the best company at selling in the world, therefore the best salesman is someone who is used to beating IBM," he said.

"They will have seven to eight years' experience in making target, and certainly be battle hardened," he added.

A perfect salesman is also one who is used to putting in long

hours. "I don't believe in salesmen who survive on personality. They are the sort who do so hour's work and expect to get by. A good salesman knows all about what he is selling and knows what the company wants to do with the equipment."

There are conservative leanings in the P-E organisation when it comes to publicity and this Hanley wants to change too. "People must know where you are and who you are," he said.

He puts the company's shyness down to its origins in the Quaker-dominated area of New Jersey. Hanley recognises that Perkin-Elmer is not really a name that rolls off the tongue but the UK division has now been set on a path of establishing a more public image.

"P-E and Prime both have about 3% of the UK market but people are far more familiar with Prime than P-E," he said.

Hanley feels that a more prominent image is an important part of his sales drive. It not only provides an important back-up for salesmen and OEMs, but improves staff morale.

"Good people need to be told that they are good. When I first came to P-E I had the impression that everyone was walking around with their heads down," he said.

The overall sales strategy has also changed and P-E is aiming at the commercial market rather than the scientific and technical area which has traditionally formed most of its business.

It seems that Hanley's plans to develop P-E are also likely to put Hanley himself in the public view after years of hiding his light under the bushel of Honeywell's middle management structure.

PLATFORM

How IT will put some people back to work

INFORMATION technology is providing new trends and choices for people, not only at work, but also in leisure. It is the key force which will change society as fundamentally as steam set in process the Industrial Revolution 200 years ago.

Technology has a record over the past two centuries of changing lifestyles more fundamentally and more positively than the scudens of governments. While governments are important in maintaining and defending desired ways of life, the technologies which have given us the steam engine, electricity, motor transport, aviation and penicillin, have been more important.

Applied technology, not only at the workplace but also importantly in medicine, has demonstrated its capacity to support more people with continuing growth in their standard of living with a constantly reducing number of man-hours of paid work. In just 100 years real wages have increased fourfold while both the population and life expectancy have about doubled.

The amount of time that people can expect to devote to paid work has fallen from 40 to 19% of their waking hours.

Information technology is different from the spectrum of technical advance which has gone before. It is special in three particular ways.

It is much more pervasive, impacting in a direct and intimate sense more aspects of our lives than any other technology - not only in the office and the factory but also at home, at school, in shopping, and even in leisure.

Its rate of development has been faster and is more prolonged than any previous technology. Its price performance has improved at a consistent rate of 40% compound per annum for the last quarter-century, and will continue at this rate, certainly for at least the rest of this decade.

If the same rate of performance development had been applied to the motor car then, for the price of a Mini 25 years ago, we would now be able to buy two Rolls Royces - and each of those Rolls Royces would travel at nearly twice the speed of Concorde.

And, unlike many of the technologies of the last 100 years, it is ecologically and environmentally positive. Above all, it does not require vast amounts of energy for its propagation and use.

The change in paid-work time has chiefly occurred through reduction in the working week, longer holidays, more education resulting in a later start in paid work, and longer retirement. In periods of great structural change, unemployment has also risen dramatically, usually accompanied by substantial increases in real wages for those still employed and a reduction in prices. In the 25 years of the Great Depression that started in 1873 real wages increased by 50% and prices dropped by 30%.

The change now taking place is one of those fundamental shifts and information technology and its associated microelectronic computer and communications technologies are the key catalysts in making it so. Historic job roles in unskilled manufacturing occupations are being replaced, even in growth industries producing goods. It is not

This Platform is based on the Grace Hopper lecture, "Jobs, Work and Leisure in an Information Technology Society", given at Thames Polytechnic by Roger Graham, who is chairman of BIS

simply that computer-based manufacturing reduces costs; it also increases the quality of the final product.

On the other hand for the first time technology, in the form of multi-media, text data, voice and video processing and communication, is significantly increasing the productivity of those involved in service occupations.

Activities which have traditionally found it difficult to secure services, distribution and even service occupations, associated with manufacturing, such as sales and marketing and research and development, are being directly affected by information technology. For the first time, this new technology is offering real productivity increases to service occupations, which offer the only ultimate jobs.

There is an unlimited capacity of individuals to consume the services of other human beings. The only issue is whether they will do so in a paid-work environment.

We are moving towards a multiple activity society, in which people's lifestyles are not only, or even principally, determined by the job they do.

Most will opt for paid work to secure not just the remuneration which jobs provide, but also the esteem that arises from the gregar-



ious paid-work environment. However, there will be more options. Some will choose long hours, higher pay and the purchase of services. Others will select shorter hours and correspondingly lower pay, while at the same time having more flexibility in their lifestyle. They will opt for more time at home in the unpaid-work environment of "do-it-yourself".

There will be less clear division between work and leisure, with a growing number spending more of their time in the unpaid-work environment.

More of people's lives, probably much more, will be spent in learning, including not just education, but also more job-centred training. The IT industries, which require continuing enhancement of skills and regular retraining of people to address the latest technology, are already setting a pattern.

People will not train for a single

career with the expectation of spending 45 years in one occupation. Many will have multiple careers and part-time work.

Paid-work organisation will self-change as the need for large concentrations of labour dissipates and more people work in self-organisations, are self-employed, and work at or near home.

In order to progress the changes which are taking place, a large proportion of the most talented should select the role of manager rather than expert. In the last 50 years too many have opted for the expert role, working subconsciously on their own and not relying significantly on others to do their job of dispensing skills, knowledge and experience. Classically, "the professions" have consumed too high a proportion of our able people.

The majority of the population will not be self-employed for a long time yet. They will expect to work in organisations, be they all small, where managers are needed to co-ordinate their activity. They will need managers to agree and help them achieve worthwhile objectives which will, in the last analysis, result to someone outside in the marketplace paying for their activities.

Roger Graham

Computer Weekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, June 23, 1983

Don't let Reagan's hawks cause chaos

LISTENING to Larry Brady, the US assistant secretary of commerce for trade, one cannot help but wonder what all the fuss is about (see page 20 and 21). While the Reagan administration's effort to extend the 1979 Export Administration Act is being met with widespread gnashing of the teeth, Brady will concede that the Reagan policy may have led to some "misunderstanding" among the allies.

Brady sees no conflict between US national security issues and international trade; indeed, he sees them as being closely interrelated.

Brady goes on to "regret the confusion, the lack of communication. Maybe we haven't explained ourselves very well, but we have done our homework". Brady himself is convincing, and certainly not lacking in conviction, but it would seem that he and other members of the Reagan administration have underestimated the dismay that is being engendered in the international business community.

No one is clear how affected the computer industry will be by the extension of the Export Administration Act. Meetings that have been taking place at Cocom in Paris are understood to be discussing Winchester discs and megabyte memories as items to be included on the controlled list.

Brady has said that the administration will try to avoid controls on the lower end of the market, but all the whispers coming out of Paris raise the fears of a controlled list which leaves little room for manoeuvre.

In a welcome statement last week, the US Chamber of Commerce in London came down heavily against a US trade policy which would hamper the free transfer of technology among Western countries. The major international computer companies understand well that an attempt by the US Government to limit the trade in technology could undermine their freedom to operate in international markets.

As the cries get louder, it is likely that the Reagan administration will either tone down its export control legislation, or else make a more concerted effort to reassure its allies that the proposed trade legislation is not the bogey man it appears to be.

There is, however, a clear message for all who live in the democratic countries of the West: the military must be strictly limited in its influence over foreign policy and control issues. It is no secret that the Department of Defence is the prime instigator behind stricter US trade policy. Many commentators have seen signs of the DoD trying to wrest control of trade from the hands of the Commerce Department, one of the more liberal departments in the administration. International voices must be raised loudly to ensure that fears of "a red in every bed" do not wreak havoc in our industry.

Sir George is right

SIR George Jefferson's advice to his staff is sound. The time has come to face the fact that the government is going to privatise British Telecom. Further union opposition will damage the organisation, the union, the public, but it won't hurt the government and won't change the result.

The union's opposition to privatisation has much to be said for it in philosophical terms as well as in practical terms. The replacement of a state monopoly by a private monopoly could make little difference in practice.

But the Commons is the place for the debate to be continued - it is now a case of how? not whether? or why? Refusing to do the work for which they have been employed will not advance the union's case an inch.

The danger is that a strike could open the whole issue up once again and the outcome could be far worse. With a majority of over 140 the government has to contend with far more radical right-wing opinion from its back benches than it had only a few weeks ago.

That would be worse for the unions even than the present course pursued by Mrs Thatcher. It also could pour money into the pockets of a few shareholders while leaving large chunks of the community unserved. Surely the object of the technological revolution is to try to spread the benefits.

If it does the opposite it will fail us all and leave us with a higher price to pay in the long run in terms of social discord.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by John Hoffmann of Handforth, Cheshire. The piece is being devoured almost daily . . . and computers are breaking down under a deluge of noughts.

BBC Nine o'clock News (John Humphreys)

LETTERS

User manuals completely rewritten

I READ with interest your article IBM loses grip on CICS market (Computer Weekly, June 21) which refers to the Merlyn Corporation study.

The study was carried out over 12 months ago and, not surprisingly since that time, the AIDS market has changed considerably.

In January this year Pansophic released MIS/OL, an ADS for Development Centre use. This product, formerly known as Central Software, was acquired from the developer, Planning Research Corp of Maclean, Virginia. There are now over 230 MIS/OL installations and MIS/OL is probably the fastest growing CICS productivity aid worldwide.

Central Software was reviewed in the Merlyn Report and obtained superior ratings to both UFO and

Mantis in five out of eight categories of user satisfaction. Central Software was the most rated product for support, reliability and overall capabilities and second for on-line performance, ease of learning and ease of use.

The only category in which Central Software was poorly rated was for documentation, and Pansophic has since completely rewritten the user manuals.

In February 1983 Pansophic acquired SGT, an Information Centre ADS, now called GENER/OL. GENER/OL is scheduled for release in the UK in the autumn.

Existing SGT users in the US rate the product as "the most impressive software development in the last five years" and in comparison to all the major CICS pro-

ductivity aids "looks a clear winner".

MIS/OL offers unparalleled efficiency for those who wish to retain CICS as their main programming language, while GENER/OL provides unrivalled power and flexibility for ad hoc, low volume needs.

With these two complementary products, Pansophic aims to dominate the online IBM market much as it has done with Easytrieve in the batch environment. With around 25,000 CICS users worldwide DP managers now have a choice of solutions. UFO and Mantis have some real competition!

JOHN McCAUGHY
UK regional manager

Pansophic
London.

The world of Meccano

THE ICL advertisement depicting a Meccano outfit and Chad's comments (Computer Weekly, June 9) about the analogy of DRS and Meccano show how both ICL and Chad are out of touch with the (real) world of Meccano!

I have been involved (and still am) with 7900 hardware and software for just over two years and can relate the Meccano advertisement to these products.

Notice the tinplate road wheels and the double-headed girders. These were out of production way back in 1960. While you will find that there are no nuts and bolts supplied to bolt the outfit together, surely this must relate to current ICL 7900/NPS software.

As for Chad, yes Meccano is now manufactured at the Calais factory it is still metal (although there are plastic parts within the system), and if Chad would like to come to the Henley-on-Thames Towro Hall on September 3, will be able to see what Meccano is really about, at the annual International Meccano exhibition.

ROGER WALLIS

Editor MAGG

Solihull.

Out of date

THE Downtime note (Computer Weekly, June 9) on ICL's DRS20 advertisement for Meccano (or was it a Meccano advertisement for the DRS20?) missed a vital point: the Meccano depicted is of the generation current in the 1950s or earlier, and thus by no means modern.

Does this imply that the DRS20 is pretty old hat, too?

G. M. COLES

Nottingham.

Acorn probe

I WAS interested to read your story about the Office of Fair Trading investigating Acorn (Computer Weekly, June 9).

Having been officially involved as one of Acorn's dealers for some time we would like to offer the Office of Fair Trading our full support in its investigation.

There have been many, many situations between Acorn and dealers which, I am sure, if they were to come to the attention of the computing public, would not shine a very favourable light on Acorn Computers.

We will be waiting with interest to see what develops.

GARY WILKIN

Technical Director

Microcentre
Bognor Regis.
Acorn dealers back Office of Fair Trading's investigation: see page 6.

Disclaimer

PLEASE make it clear that the headline "Legal wrangle costs UCL £100,000" (Computer Weekly, June 9) does not refer to University College London, which is normally abbreviated to UCL.

PAUL SAMET.

UCL: Computer Centre
London.

A Torch look-alike?

THE HH Tiger is well able to stand the closest scrutiny and we are satisfied it would acquit itself in any article by an independent reporter. Recent press articles are, however, not in that category and regrettably have no basis in truth and are a distortion of the facts.

We shall have to set the record straight and hope that Torch can then follow our example of concentrating on the perfection of its product and perhaps not waste time criticising others.

Fiction: The HH Tiger when compared with the Torch is "remarkably similar", "nothing less than bad imitation", "too similar to be a coincidence".

Fact: This is a matter of opinion. Fiction: It is said that Torch provided us with a complete set of drawings.

Fact: At no stage were we provided with a complete set of drawings. We were provided with: crude top level parts list at assembly level only (no technical information); invitation to quote; safety considerations; metalwork drawings.

Fiction: The innuendo to be drawn from the article is that we have used the knowledge gained when quoting for Torch to design the Tiger.

Fact: We quoted for Torch in April 1982. The documentation shows that the Tiger was conceived and the preliminary designs completed by January 1982.

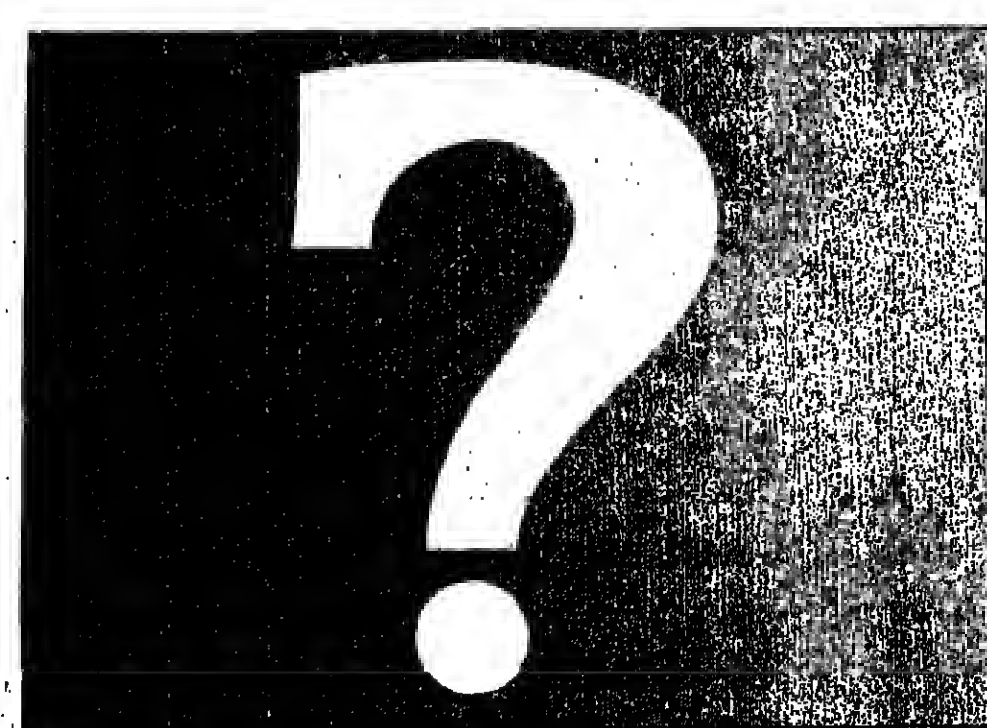
We purchased the product design and concept in December 1982, and had no hand in or knowledge of the design until shortly before that date.

It is suggested that legal action might be pending. We have not even had a letter: you may think that silence speaks volumes.

JOHN KERR

Group sales director

Former Oliver Budge marketing manager
HH Microcomputers
Cambridge.



DOES THE FINANCIAL DIRECTOR THINK THE D.P. DEPARTMENT DOESN'T ADD UP?

QUESTION 4 OF FOUR

DOWNTIME

Too clever to be a programmer!

IT must have come as a surprise to London Transport when Underground train driver Christopher Hughes, 36, won the BBC Mastermind title.

At any event, LT decided that

A puzzling choice for Dr Gene Amdahl

GENE AMDAHL is not known to the industry just because he is a fine judge of wines. Some people reckon that designing the IBM 360

Hughes was too clever to be a train driver, so he was offered a job as a computer programmer. Now, anyone who knows anything about computer programming can tell you they have far less general

knowledge than the average train driver.

Hughes knows this, too. He said: "I wouldn't touch the job with a barge pole. I am basically hostile to computers."

mainframes of his new company, Trilogy. IBM was out and Gene did not want for an Amdahl. He went for an NAS AS9080.

machines and starting up Amdahl line means he should know a thing or two about computers. But what has them puzzled is the choice of



This plaque is to be found built into the wall around St Bartholomew's Hospital, London. I learn from the plaque at St Boris that a computer is a "non-U computer".

What a fine mess!

THERE are few benefits in being a pensioner these days, but one of the remaining boons is exemption from library fines in some areas.

Imagine, then, the surprise of a relative of one of my colleagues at the receipt of a computer-produced demand for the return of several books.

Writ large across the missive in purple letters was the additional message: "These details may be incorrect due to computer error." But there was worse to come.

Although pensioners are exempt from library fines, it appears they must still pay a 25p charge for the sending of a reminder demanding fines they are not obliged to pay.

Did you understand that? If so, please write and explain it to me.

Plucky chap

EVER wanted to play the guitar, but couldn't manage all those fiddly finger positions? Well, thanks to Satoru Nagashima, an engineer at Victor, you can - with the help of the ubiquitous micro.

Nagashima has rigged up a laptop guitar in a contraption which saves fretting about where to put your fingers. The plucky player then picks the strings for you.

Only two problems face this prospective rock star: One is the size of the thing - about the size of a piano.

The other - you have to keep bowing to play a piano keyboard in order to program the darned thing.

Chad

10 YEARS AGO

FROM COMPUTER WEEKLY OF JUNE 21, 1973: Two ICL visual display units were installed at the House of Commons library to provide MPs with their first demonstration of online computer information services. . . . A unified range of computer systems from the Cii-Siemens-Philips combine was expected within weeks. . . . The Key-Edit 100 was introduced by ICL.





ICL's first-time Tory wins — but the rest fail

John Riley finds out what happened to computing's election candidates



WOOD... The winner.

PARLIAMENTARY candidates from the computer industry have hit out against the small proportion of industry representatives in Parliament.

"It was recognised on the doorstep that high technology businesses are not adequately represented in the House of Commons," said John Waller, managing director of DEC specialist Insurance Systems and Services and an unsuccessful Liberal candidate.

Waller, who cut the Tory majority in Twickenham from 13,000 to 4,300 with 20,300 votes, made that issue the focus of his campaign. "A major plank in my campaign was the need for more engineers in the country, and I attribute a large amount of my vote to the recognition of the electorate that there are too many lawyers and too few engineers," he said.

Another Liberal, Ray Poynter,

founding director of software house Database Computer Consultants, added: "It looks as if there will be the same bias against professional people from industry there's always been, which will mean weak legislation in the technology fields." Poynter, who collected nearly 10,000 votes in Nottingham, hopes to stand again, this time for the European Parliament elections next May.

The Liberal view is supported by David Hewitt, Labour candidate for South Dorset, and a buyer with IBM Havant. His offer of 10 years' experience in the industry to the House of Commons was rejected by the electorate. "There are not enough MPs with experience of high technology industries," he said.

Only one of the 30 or so first time Parliamentary candidates working in the computer industry was successful. Timothy Wood, a

project manager in personnel systems applications software at ICL Reading captured Steveage for the Tories from Labour.

Wood intends to maintain his interest in technology, and now becomes the Parliamentarian with the most comprehensive computing experience. A keen chess player, he joined Ferranti after graduating in Mathematics at Manchester University in 1962. His division of Ferranti became part of ICL, which in turn became a supervisor on George III and VME operating systems before becoming an applications project manager.

He is optimistic about Britain's future in information technology. "Over the last two years or so, Japan hasn't done all that well with micros. Sinclair's success shows that the Japanese challenge can be beaten off. On the software side, I

think that Europe is well in advance in applications development."

Questioned on information technology and job loss, he said: "I am much less pessimistic than many people. Most of the unemployment problem is due to the economic situation than to IT. However, there are problems with re-training people with the introduction of IT, and one area is a worry — it will be difficult to train the least skilled."

When asked if he would be retaining formal links with ICL, he replied: "That is a delicate matter from my point of view and I can't comment on that. It hasn't been discussed."

The other candidates from the computer industry were not happy with the Tory's past record. Martin Stears, Labour candidate for Broxbourne and also from ICL — an analyst programmer in decision support at ICL Stevenage — said: "The support the government gives the computer industry is derisory compared with Japan and Germany. The Alvey proposals are minimal — and research and industry should be properly funded."

Steers demands higher status for engineers: "Engineers are treated like the lowest form of life," he said.

APL consultant Margaret Joachim, who stood for the Liberals against Thatcher, and who admits to a "mild obsession with traction engines" was also critical.

"The Liberals are more genuine enthusiastic about new technology than the Tories. Ken Baker made ideological noises in lots of places last year but achieved little, with the government withdrawing support from small businesses just when they needed it. We need a more imaginative outlook."

All the Tory members with computing connections in the last Parliament got back, but a Labour casualty included John Garrett, one of the party's spokesmen on information technology who was defeated at Norwich.

Ken Baker, who remains Information Technology Minister, had a comfortable 19,500 majority in his new safe seat in Mole Valley. Such was his confidence that during election week he was still indefatigably doing the rounds of computer companies, opening new premises for Reading based Computique, an office systems dealer specialising in the Rascal Series 6000 computer, and a post production suite at ENG (Video), also at Reading.

Other Tories returned to Parliament include undersecretary in the Department of Industry, John Butcher, ex-marketing manager of General Computer Systems (Teletext), and Ken Warro, a director of Veotek since 1972, and described as one of the Commons' keenest computer industry supporters.

Three former Tory members who have been criticised for submerging their computer expertise were also returned. These are Barry Hendersoo, ex-ICL Systems Consultants and Univas, Robert Atkins, ex-IBM and ex-Rank Xerox, and Alex Fletcher, another ex-IBM man and junior Scottish Office minister.

Labour's Science and Technology spokesman Geoffrey Robinson was returned as were John McWilliam, a former Systems X engineer, and ex-computer analyst Allen Adams. None of the first time candidates from the industry were successful. Of these, the two most successful were the ICL candidates, Martin Stears, and software marketing manager Colin Bastin, who both collected over 8,000 votes.

All the Alliance candidates from the computer industry failed to



WALLER... Cut Tory vote.



POYNTER... Spoke of his.



HEWITT... More tech MPs.

win seats. Waller gained the most Liberal votes of these candidates, and Richard Corden, an IBM Norwich systems engineer, also standing for the Liberals, polled 18,600.

Stephen Mulholland, a senior computer operator with Thames Case came second at Wirral West with 10,000 votes and has strong views on new technology education for young people.

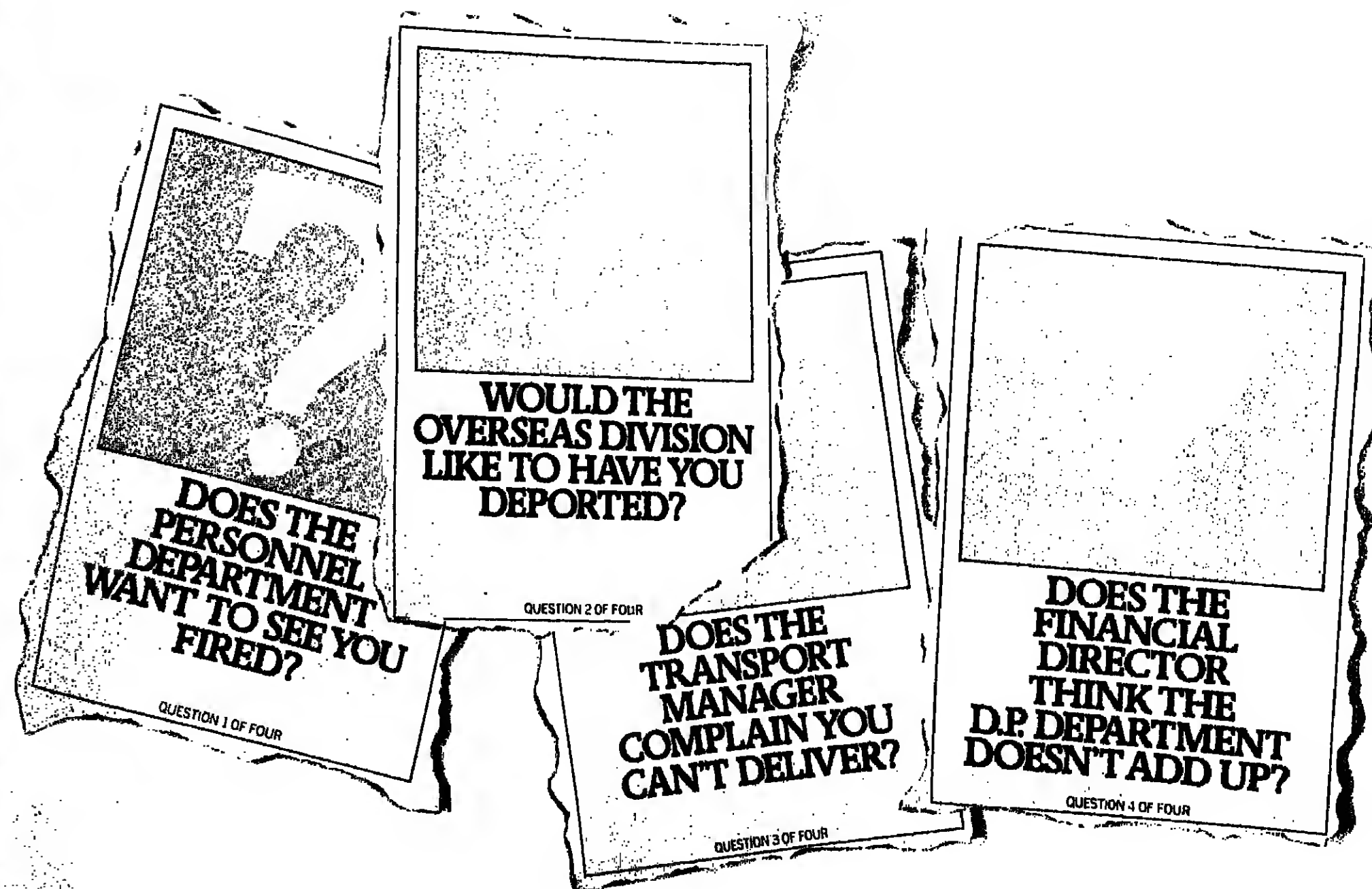
The SDP Party had some high powered computer industry candidates. Howard Gibson, head of personnel relations for the whole of IBM UK got the highest SDP computer industry vote, gaining 15,300 votes at Chichester.

A keen tennis player, entrepreneur and sailor, he relaxed after the election by cutting the grass but was reticent about his future.

The other SDP candidates included Parry Mitchell, chairman of United Leasing; Les George, managing director of Ferranti Instruments; and Peter Burton, managing director of CASE (Computer and Systems Engineering).

The three national party candidates from the computer industry all had scores in four figures. Alexander Morgan, an account consultant with General Electric Information Services Company, standing as Scottish Nationalist for North Tayside, polled 9,200 votes. North Tayside, a lecturer in computer education, gained 7,100 votes. The sole Plaid Cymru candidate from the industry, John Dwyer, a systems analyst with Wales Gas, collected 1,100 votes in the Vale of Glamorgan.

The four Ecology Party candidates in the computer industry averaged around 500 votes each.



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Alvey supremo shows faith in British software

George Black talks to the director of the Alvey committee, who believes the UK can be software factory of the world

MANY people groaned with dismay when the government chose a civil servant in his mid-50s to head the national effort at competing with the Americans, French and Japanese in the next generation of computers. They at once pictured a weary, grey-faced acerbic looking forward to retirement, not a man hungry for the supreme challenge of keeping Britain on the industrial map.

Brian Oakley graduated at Oxford, began work at the government research institute at Malvern and rose to become secretary of the Science and Engineering Research Council in Swindon where he has been for the past six years.

He served on John Alvey's committee that recommended a co-ordinated endeavour between public and private sectors to take on the "fifth generation" programme. In April the then industry secretary Patrick Jenkin appointed Oakley as director of that programme.

George Black went to see him in his new rooms in Millbank Tower and found him unexpectedly full of zest and opinions.

Question: Most of us thought that the government would pick an industrial heavyweight, a Michael Edwards of British Leyland or an Ian McGregor of British Steel to

lead the Alvey team - is that how you see yourself?

Answer: No, I don't claim to be of that type. I can't claim to have made millions from the world of business, but I think I can do the job required.

Michael Edwards might have met some difficulties that I won't, mainly because I have experience of working in all three of the government departments involved - industry, education and science, and defence. Also, I shall have a number of budding Michael Edwardses working for me within my directorate, I hope, and I plan to make an announcement on its members very shortly.

I have already co-opted some good people, including an assistant secretary from the Trade Department, Tim Walker.

Q: Has there been much difficulty in finding the right people to work with you?

A: No, I've had a lot of help from firms who have proved fairly willing to put forward their own people.

There has naturally been some difficulty in getting the exact balance of the team right and particularly on the expert systems side.

The problem there is that there are just so few of them and they are mostly young and commercially inexperienced.

Q: I notice you call it "expert systems", not "intelligent knowledge-based systems", or IKBS as the official plan had it. Is that a significant change of emphasis or narrowing of the perspective?

A: No, I just think IKBS sounds a bit pretentious - a bit of a word for nothing - and not many understand what it means.

We tend to steer away from "artificial intelligence", because it had such an unfortunate overkill in the media in its early days, which did a great deal of harm to our community.

Q: Which of the four areas you are targeted at - expert systems, software engineering, very large scale integrated circuits or the man-machine interface - do you think is going to be the most important?

A: Which is the most important of your limbs? My personal concern is centred around software engineering. That is the area in which, if we can turn it into a true discipline, we can be of immediate help.

The other three areas are longer-term commitment. In VLSI, the achievement of a million circuits on a single chip will have an incredible effect. We sometimes forget how constricted our society is by the sheer weight and bulk of our products. It needs an H. G. Wells or a Jules Verne to imagine the scope of the revolution involved in VLSI. But I would emphasise that it is all about being able to manufacture them without delay. One VLSI major you can count on the fingers of one hand.

In expert systems we already have some results in a limited specialised area, but to get those results in a more general field could take a very long time. I'm impressed with the number of firms who are now taking expert systems seriously.

The man-machine interface is perhaps the Cinderella of the four but that is also being taken seriously by a lot of firms. A lot of them now have psychologists on their staff working on these questions.

Q: How easy is it going to be to make progress in expert systems, given the long overkill and the present lack of skilled people available?

A: The trouble is that it's a difficult subject that doesn't look difficult at first. The problem is that the incredible sophistication of the human brain is so difficult to reproduce.

The first generation of products in this area probably won't be desperately successful, but then just how good were the first software products? We have to go through that stage as we went through it with software.

We have to get more people working in this area. There are good breeding grounds in the universities and the Education Department has added new posts from student to lecturer level. I see it as my function to point out to those responsible both in the DBS and SERC where the future needs will lie.

Q: So just how good do you think our chances of success against international competition are?

A: I'm confident and I'm determined that we will improve our underlying technologies. We forget our national assets sometimes. We are too apt to run ourselves down. We do have some bloody good people. And we have a good record for products.

Japan is currently agog with Prolog. There was a US bank which wanted to install a network system - it took 32 tenders and was embarrassed to find the top three were all British.

The important thing about the Alvey programme is that we shall be looking for openings for commercial exploitation from the beginning.

Q: How good is the response so far from the smaller firms who may have felt put off by the limit of 50% government funding?

A: Well, there is a problem there. I feel it is vital that firms which contribute to the programme do so because they really want to and believe it will help them improve their products.

The country has woken up to the idea of collaborating

I think, in practice, British industry is now so conscious of the threat from abroad that it will be willing to pool its expertise for survival. It does require a certain change of attitude. We have always gloried in our independence of mind and have tended not to want to work in big organisations.

One way round the problem is for the smallest firms to get together in consortia, or for big firms to subcontract parts of their projects. With Project Universe it has proved surprisingly easy for partners to agree - this gives me faith that it can be done and perhaps gives a pattern to work from to some extent.

There is also evidence of a lot of small firms taking part in the Common Market's Bapris scheme. Q: Will the change in the structure of the trade and industry departments have any impact on your plans?

A: No, I don't think so. I don't foresee any significant change of directions. I am sure the government will stand by the undertaking that Patrick Jenkin made that we should be able to find further support for particular plans we felt were worthwhile.

Q: Do you see any danger of duplicating the Esprit work?

A: No, because there just isn't enough expertise to go around anyway. We can't afford to. We must be complementary to Esprit. Our

conditions anyway will not be identical.

Q: Have you been satisfied with the initial level of response from potential participants in your effort?

A: The 'phone never stops ringing. There has been a very great deal of interest - the country has without doubt woken up to the idea of collaborating.

Q: What aspects of software engineering do you think will be most crucial?

A: I think it will be formal language specification and verification - that is, the legalistic proof that a program actually does what it is claimed to do. That is the way forward to establishing standards.

The Three Mile Island incident is a case which shows that software has to be made foolproof. I believe it can be done and British universities are already well up in this area. Debugging costs the economy an enormous and avoidable amount.

We need software like the Rolls Royce. If you buy a Rolls you can rely on the fact that the engine has been screwed in properly.

There is a story of a programmer who saw a duck walk across the screen in a program that has been thousands of times. He mentioned this to a colleague who said, yes, he'd seen it too, but he thought he must have imagined it so he hadn't told anyone.

The point is, that's a real worry. We have to make sure those first bugs can be ironed out. We could become the software factory of the world, as we have been the insurance capital: it's a real opportunity, particularly as our rates of pay in this industry are lower than those in Germany, France or the US. But we have to be perfectionists.

Q: If we are to become the software factory of the world, should we not now be concentrating on what is happening in the schools?

A: I think it's unfortunate that micros are being used in schools with languages that are already out of date. They should be much more logic-oriented. But the quality of applicants for computer science degree courses has soared, looking at the A-level results.

The Education Department gave 2,000 extra undergraduate places and 1,000 more post-graduate places; I'd like to see still more. But we don't need these people, we need plenty from other subjects too.

Q: Will you be here to see the Alvey programme through a full five years?

A: No, I shall be retiring in four years at 60. But by then I shall be able to say that the thing is in full flood and it has been a success.

Q: When do you foresee the fruits of the plan ripening?

A: I hope to see some research contracts being signed in September and maybe even a few will get the go-ahead before then.

Q: How do you see the universities' role in the plan?

A: I think there has been too much division between academics and industrialists. The notable exceptions are with Acorn and Cambridge, GEC and Bath, Newcastle and MARI, Manchester and Peranti. That's the way I'd like to see things moving. Unless from industry must - not academic work. But it would be a tragedy if academics were all dragged into short-term projects just from the profit motive. The government must be prepared to spend on scholarship in a speculative way with sometimes no obvious promise of return - and I'm sure they do understand that.

COMPUTASTARS THIRD REGIONAL HEAT

National Provident is better by 12 points

WELL, it's a lovely day here at Enfield as the 1983 Computastars competition moves into top gear. The sun is shining and the teams are ready so, without further ado, over to the medicine ball throw.

Thank you, well here at the medicine ball throw, the story is that outsider Mercantile Credit II nearly beat fancied Rank Xerox with a terrific team performance. But Xerox held on to take the lead, with Thorn EMI's number one, Mike Howes, taking the individual honours.

And in the women's competition, it's a double first for Case, with a team victory and with team champion Janet Carter beating Caroline Carter-Jones from Mercantile Credit into second place. And now, over to the hockey.

Thanks, and here in the hockey dribbling it's Tony Osborn from newcomer Robert Horne who scores, and his performance means that the team moves into second place, just one point behind Rank Xerox.

In a reversal of the positions in the medicine ball, Caroline Carter-Jones has now beaten Janet Carter and Yvonne Fossey into joint second place, but it's Britannia Airways which leads the field after two events.

Now for a summary of the last two morning events: a tie between National Provident and Digital II in the first place in the standing long jump leaves Eschmann & Walsh in

second place by a single point. Datasolve's ladies' team wins through too, but drops to third place in the team sprints, leaving British Airways a convincing 13-point lead at the break.

And it's Robert Horne I that everyone's talking about in the men's events. As a small unit and first time entrant, it has held out

tro Gordon Cairns what had happened. "I don't know. I'm tempted to have a dope test, but I'm afraid they'd all pass." Thank you Gordon.

And now over to the start of the 100 metres to catch up on the current situation. Well, here in the 100 metres it's National Provident putting up the best performance, with Robert Horne I in second place. But again it's Tony Osborn from Hornes who wins the individual event from Chris Evans of Capsicum and Miles Templeton of the Ministry of Agriculture and Fisheries.

As for the ladies, victory at last for Case and its number one, Janet Carter.

Okay, here in the football dribbling, it's upset time again as the controversial time-out rule eliminates several front runners. It's Thorn EMI which puts up the best team performance with Datasolve in second place. Ivan Balchin of Eschmann & Walsh knocks Mike Howes and Tim Murfet into joint second, and in the women's heat, it's Thorn EMI taking the team honours and Janet Carter of Case taking her fourth first place of the day to stay ahead of Yvonne Fossey from Datasolve.

There's victory here in the sit ups for Ford, tying with Digital II. This result puts the Digital second

team 20 places ahead of the first team - obvious selection problems at Digital. And another upset - individual victory goes to one of the Legal & General veterans - who says you're finished at 35? Tying with him for first place is Steven Bell from AP Bank.

And there's another tie in the ladies' competition, with Digital and Thorn EMI both scoring 25 points.

Now for the final event - the 1,600 metre relay. It's Barclays Bank which is over the moon, scoring its first victory of the day with a terrific time of 3:59.53. A special mention must go to Robert Horne II which introduced the first mixed team to Computastars. Dawn Wells was the brave lady helping the team to 32nd overall.

Not surprisingly, it was Phil Haddy of Barclays who took the individual title with his marvellous 800 metre run in the relay, but it was too late for the team to win through to the finals.

Coming up from third to first overall were the women from Mercantile Credit who finished 10 points clear of Case, with Digital third. The individual title went to Caroline Carter-Jones.

Best small unit was Robert Horne I, finishing splendidly in second place, and the veteran team on its way to Birmingham is Legal & General II.

Report and pictures by Andrew Thomas



National Provident's competitors came prepared for rain. They were wrong, but they gained some consolation by winning the competition.



Datasolve's Jane Murphy plays in the handball.



National Provident's Dave Cross is on his way to second place in the hockey.

Rank	Name	Points	Total
1	National Provident	25 34 36 33 37 32 28 36 259	
2	Robert Horne I	27 39 33 30 31 24 30 33 347	
3	Rank Xerox I	34 33 31 21 24 30 22 30 227	
4	Digital 2	24 22 36 24 27 34 31 27 225	
5	Thorn EMI	26 23 29 24 28 38 21 33 222	
6	Capsicum	27 26 27 16 26 26 29 24 220	
7	Ford Motor Co 1	21 23 18 45 24 17 31 33 212	
8	Case 2	22 31 34 30 26 26 15 24 208	
9	Legal & General 1	14 29 26 27 30 27 30 24 207	
10	Legal & General 2	22 32 26 24 25 21 30 27 207	
11	Barclays Bank	18 24 27 27 25 13 27 45 204	
12	Eschmann & Walsh	27 31 35 18 22 32 18 20 201	
13	Playway Services	25 31 24 33 24 18 21 24 200	
14	Computer Weekly	24 31 26 21 26 26 14 24 198	
15	Ministry of Ag & Fish	27 19 22 15 28 26 24 36 197	
16	Case 1	27 29 22 24 24 24 20 27 197	
17	National Provident 2	18 27 28 38 23 21 24 24 194	
18	Mercantile Credit 2	28 26 24 27 24 14 24 27 194	
19	Datasolve 1	25 33 17 15 28 36 17 21 193	
20	I. H. Minter	20 22 26 18 24 27 24 21 185	
21	Datasolve 2	24 18 22 12 19 20 26 21 174	
22	Surrey CC	17 21 23 18 19 26 27 24 170	
23	Digital 1	12 25 27 19 24 18 22 18 162	
24	AP Bank	15 22 12 19 20 26 24 16 161	
25	Digital 3	23 25 17 15 25 18 17 18 158	
26	Mercantile Credit 1	20 22 16 24 20 14 25 15 156	
27	City University	17 18 17 24 15 12 18 11 148	
28	Mercantile Credit 3	22 19 27 12 20 14 18 21 148	
29	Provident Mutual	16 17 20 12 25 11 27 14 142	
30	Ford Motor Co 2	21 18 26 9 21 5 17 15 142	
31	Robert Horne 2	18 15 17 16 17 17 15 13 132	
32	Rank Xerox 3	22 15 13 6 21 15 18 5 116	

Rank	Name	Points	Total
1	Tony Osborn	9 14 13 10 12 11 11 11 91	
2	Dave Cross	8 12 13 10 10 10 11 8 88	
3	Robert Mullaley	11 7 10 8 10 10 13 8 78	
4	Mike Howes	9 9 10 9 11 9 10 8 75	
5	Chris Evans	8 11 8 10 11 10 11 7 75	
6	Frankie Vaughan	8 10 14 6 9 15 6 4 74	
7	Ivan Balchin	3 9 5 15 8 7 12 11 72	
8	Grant Mansfield	7 11 8 9 9 13 6 9 72	
9	Tim Murfet	9 10 14 10 8 9 11 2 72	
10	Don White	6 11 8 9 10 8 11 8 71	
11	Jan Thompson	9 8 8 5 11 12 8 12 71	
12	Allan Templeton	9 8 8 11 10 12 7 6 71	
13	Colin Ansell	8 13 10 11 10 12 7 6 71	
14	Vicent	8 12 9 7 7 10 7 10 70	
15	Karrie Davetral	7 10 9 8 8 5 13 9 69	
16	Veteran	9 10 12 9 11 8 14 6 66	
17	Chris Prier	4 6 7 9 10 6 7 15 64	
18	Paul Perotti	9 7 9 9 7 3 10 9 63	
19	Ed Perotti	7 11 7 5 8 11 6 7 62	
20	John Tapp	8 7 7 9 8 9 8 7 62	
21	Chris Redwood	5 7 8 7 9 8 9 7 59	
22	Steven Bell	3 7 6 4 4 8 7 13 58	
23	Keth Wood	7 6 8 8 7 7 7 7 57	
24	Veteran	10 2 6 7 7 7 7 1 53	
25	Peter Jones	6 7 7 8 4 8 1 6 49	
26	Veteran	7 8 7 4 7 7 8 7 33	
27	Philip Burke	3 12 5 9 1 8 8 50	
28	Trincher & Howell	2 3 6 3 8 3 11 6 48	
29	Kam Gill	2 7 5 6 6 3 11 6 48	
30	Veteran	7 7 4 2 7 11 7 2 47	
31	Barry Murray	6 3 7 6 8 1 6 7 46	
32	Steve Hewlett	2 6 3 8 3 8 3 8 44	
33	Ian Collins	2 7 9 3 7 1 4 5 38	

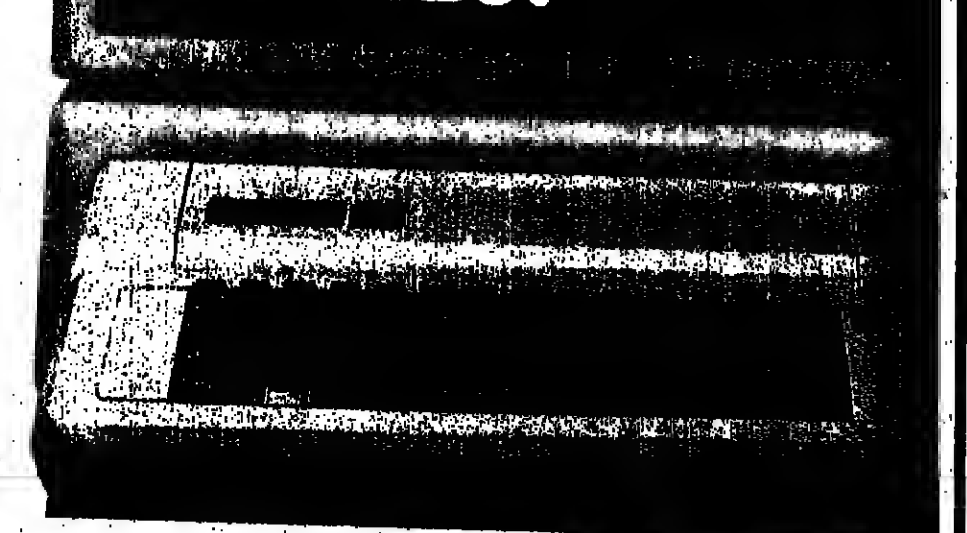
Rank	Name	Points	Total
1	Mercantile Credit	23 24 30 30 24 21 24 43 221	
2	Case 1	31 27 33 18 9 34 28 25 210	
3	Digital 1	28 26 26 18 23 23 24 39 200	
4	Surrey CC	20 24 20 27 23 23 24 39 200	
5	Britannia Airways	24 26 23 43 20 18 22 6 196	
6	Rank Xerox 1	22 28 20 26 20 14 27 7 184	
7	Thorn EMI	26 23 18 15 20 31 22 9 167	
8	Provident Mutual	18 23 21 6 20 26 19 0 133	

Team in bold go through to UK final. Events (left to right): Medicine ball throw, hockey, standing long jump, 100 metres, football, sit-ups, 1,600 metres relay, 5 metres small unit relay, 5 metres team relay. Starting by Computastars Computer.

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WORKPLACE

It's a big deal as CAP bids to take over in the City

A FINANCIAL dealing room is not easy to set up. Many different trades need to be co-ordinated, including carpentry, cable laying as well as the various computer-based financial information services such as are supplied by Reuters.

CAP Financial has stepped in with an offer to shoulder the whole burden of building the dealing room. It will do the data processing, and subcontract the other tasks.

"CAP used to stick in the traditional role of DP and leave the rest to others," says David Victor, manager of CAP's London financial branch. "Now we are saying we will take complete responsibility for the dealing room."

One of the first in put computer power on to a dealer's desk was Citibank, which in 1981 set up a system based on Apple computers linked by the Ethernet local area network.

Now many banks and money dealers are becoming customers of what is a £100 million market and still growing fast.

But the problems are many. One is the sheer weight of cable needed to distribute the financial information services to each desk in a room. One dealing room set up recently had six miles of cable

weighing several tons. It had to be carefully laid to spread the load evenly over the floor.

Some dealers have complained that Reuters, which dominates the market for financial information, has not made matters easy by its insistence that every terminal linked to its network be hired from them at £10,000 each.

Since there are 34,000 terminals linked to Reuters network for information on exchange rates and stock prices, it is not difficult to see how the company earned the record £36.5 million profits last year that have tempted its Fleet Street owners to cash in by selling shares to the financial public.

But Reuters has relented a little to pressure from dealers to liberalise its network.

Dealers want to be able to lease a single line and distribute the information as they like through the building, rather than having to rent a Reuters terminal for every entry to the network.

Reuters' US rival Telerate came in and offered dealers precisely this service, but at a higher price. Unicom also offered a cheaper line to its network for just £5,000, but with the problem that because there are few subscribers, the information is not so good.

Reuters responded to these developments by offering limited line feeds giving just 16 or 32 pages of information.

Reuters also recently introduced a keyboard to enable dealers to combine the various external services with their own data held on internal computer systems. This is based on software called Keyboard Display Driver (KDD) to control the switching between different data streams. A dealer might typically have Reuters on one screen, his own internal computer system on another, and a data capture and accounting system on a third.

Another possibility for stockbrokers and investors is the Stock Exchange's Topic system, which is the world's largest viewdata network with 6,000 terminals. This uses colour terminals to give compact and easily readable statistics of stock market movements and company results.

Part of CAP's dealer room consultancy service is to help decide which services are best for each application. "There may be an advantage in having both Reuters and Telerate on one desk," says Victor.

CAP is keen to emphasise its impartiality, and that the consultancy service is not a front to push the company's own products. "There is a need to build a bridge between the different services," says consultant Graham Sear. On this pretext, the company is offering to tailor a keyboard using Reuters' KDD to bring in the services a customer needs. Sear maintains that Reuters itself would probably not be too keen to connect up one of its rivals using KDD.



"We will take complete responsibility for the dealing room."

CAP is not alone among organisations involved in financial information in moving to unfamiliar pastures. British Telecom has moved into the market for City systems with a touch sensitive terminal for dialling phone numbers commonly used. And banking systems specialist Arbat has recently extended its offerings in the telex market.

Cut-price micro training

LOW-COST training for computer users is hard to come by. But for micro users prepared to buy in bulk, London training specialist ADM is offering two cut-price schemes.

The secret is the £100 a week grants offered by the Manpower Services Commission to subsidise computer training courses. These are paid regardless of the cost of the course, so if a company can offer training for £100 a week per person, the user pays nothing.

ADM's courses cost £200 a week, reduced to £100 with the MSC grant.

But to get on the courses, companies must either buy at least 100 days' training under ADM's Edshare scheme, or guarantee that there will be at least five other people on the course at any one time under the Edshare scheme.

The Edshare courses will normally be given on the site of one of five or more companies taking part. An extension of the scheme is being offered to the QEMs which supply the micros. "We would deal with someone selling say 100 Superbitz," says ADM director John Reid. "The OEM would take half the profit of the training."

There are 20 different courses in the Edshare and Edshare schemes, to cater for different types of user including an introductory course, and one for financial managers as well as standard teaching in database, CP/M operating system, Basic programming and local area networks.

Derby-based Tower Associates is also starting courses in August for business micro users.

PEOPLE

MicroPro International has made two appointments as part of its policy to expand its service support operation in the UK. Jacky Kearns has joined the company to provide sales support for MicroPro's distributors and OEM customers, while Janice Huggins has been appointed to increase MicroPro's training and technical support facilities. Kearns was previously sales support executive for Kallitell. Huggins was senior adviser/consultant at WP Management Services, an Alfred Marks' division.

Albert Knoll has joined Gerber Systems as managing director of Gerber Systems Technology GmbH with responsibility for the German branch office in Munich and sales and support of the company's products in Germany, Austria and Switzerland. He will report to John Adams, managing director of Gerber Systems Technology International, based in the company's European headquarters in High Wycombe.



Newly formed Strategic Planning Systems International has appointed Therese Westerdale (above) as marketing executive with responsibility for desk marketing and mailing campaigns. She was previously a lecturer in Maths at Aylesbury College of Further Education.

High Macle joins General Electric Professional Services company from the Commonwealth Communications Bureau. He will join a project team based in one of GE's 10 offices in the US.

DIARY

JULY 5
Computer Use In Small Hotels. Run by Middlesex Polytechnic, it takes place in Hendon, London. Cost is £55. Details from Carol Moon, 01-262 6545.

JULY 11-15
Practical Project Leadership, at the Swan's Nest, Stratford-upon-Avon, is divided into two, one-week modules. The first deals with the practicalities of controlling and managing project teams. Cost is £450. The second, from July 18-24, looks at leadership styles, motivation and communication. Fee is £495. Both weeks booked at once cost £880. Details from John Maitland Ltd, (0295) 56161.

JULY 12, 13
Vierata Systems is a briefing seminar for management given by consultant, Langton Information Systems. Organised by NCC, the venue is the London Tara Hotel and cost is £276 for NCC members, £306.67 for non-members. Further details from NCC, (061) 228 6333.

AUGUST 1-12
Introduction to Organisation and Methods is designed for those involved in administration or management who need to review current systems. It takes place at the Henry VIII Hotel, London. Course places at £510 may be booked through the course registrar, Cherry Bignmore, on 01-261 9237.

CONFERENCES

SYSTEMS and applications programming can learn about and use the "UNIX" system, supplied by Bell Laboratories, from July 11-15 at the University of Nottingham. Cost of the course is £450. Details from Dr D. J. Brailford.

THE fourth annual Monotype seminar, takes place at the Monotype Corporation, 11, Abchurch Lane, London EC4N 3DF, on September 2 at 11.00 am. The seminar will focus on the time management system, designed to enable managers to make more effective use of their time. Fee is £249 for NCC members, £270 for non-members, plus VAT. More information from 01-



company's range of Mentor minicomputers. He previously spent two years as sales and marketing manager with Hasler, the Swiss telecommunications company.

Anura Guruge (below) has joined Northern Telecom Data Systems as support and technical marketing manager for the UK operation. He is responsible for all UK marketing activities and the company's base support group. He was previously with ITT Business Systems. Guruge is also the author of A Guide to SNA which will be published by Pergamon Infotex in September this year.



Breeda Wigley has been promoted to education services consultant for Redifusion Computers.

Giles Davidoo has joined Integrated Business Systems from the Wellcome Foundation. His initial responsibilities will be implementing a personnel system for a restaurant chain and working on Informer, IBSL's new product information centre for IBM mainframes and Personal Computers.

Strategic Planning Systems International has appointed two senior programmers. Andy Dymoke was previously with UCSL Microsystems in Offenbach, W Germany, as software and systems manager. John Bonney was formerly with UCSL Microsystems for six years as senior development programmer.

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Management restructuring at computer company Peterborough Software has led to two new senior appointments. Rupert Blake (above left) becomes divisional manager with responsibility for education and training. He was previously the company's southern region sales manager. Trevor Lakin (above right) has been made customer education manager. He has been with Peterborough Software for five years, previously as product manager for the payroll package, Unipay.

Penny has been involved in the fire and security industry for the last 20 years.

Micom-Borer has appointed Andrew Burian export sales engineer. He was previously a senior systems analyst with Canadian Pacific Steam Ships working on a telex message system. His new position will involve liaising with



the company's distributors in North Africa, the Middle East and Greece.

Promoted to head of systems development of TSB Trust Company is David Grey. He joined the company in 1978 from British Airways, where he was computer project manager responsible for the reservations system.

Ten join Jet power for peace project

THIS month 10 programmers and operators join one of the highest powered projects on earth. They will be working in the computer room at Jet, the Joint European Torus project, to see if the immense power of nuclear fusion, the well-spring of the hydrogen bomb and the sun, can be harnessed for peaceful applications.

Jet is not allowed, under EEC statutes, to take permanent staff, so it put the contract out to tender with recruitment agencies.

Knight Computer Services picked up the lucrative deal, with contracts of between five and seven years. Not many permanent programmers stay in their jobs that long.

Operations manager Kris Emery, who works for the UK Atomic Energy Authority, says that it is more convenient to hire contractors for this kind of work. The agency concerned can, in theory at least, come up with the right person for each part of the project.

The computer room is responsible for control of the equipment and for capture of data, using 25 Norsk Data minicomputers. But more powerful machines are needed for detailed analysis of the data, which comes in at the rate of up to 10 megabytes in 10 minutes.

The data is therefore passed down British Telecom's two Mbit per second Megastream link-up to an IBM mainframe at Harwell nearby, and then on to the even more powerful Cray supercomputer.

The aim of the project is to harness nuclear fusion; the energy generated when sub-atomic particles are fused together at extreme heat.

The process is the opposite of the process of nuclear fission which is the splitting of the atom, and the basis of the first atomic bombs dropped on Nagasaki and Hiroshima.

Nuclear fusion has already been

tapped, and works reasonably well. So why all this huge investment in the much more technically difficult process of tapping fusion? One reason is that the process is capable of delivering far greater power than fission from a given size of reactor. It is also thought to be safer, although part of the aim of the JET experiments is to assess this.

Also the fuel for fusion is deuterium, composed of heavy water molecules. All water contains a small proportion of deuterium molecules, so there you have an abundant source of energy - the sea.

The process is simple in principle. You heat heavy hydrogen gas extracted from the deuterium up to a colossal 100 million degrees Celsius, far hotter than the sun. This fuses particles together, and results in a stream of neutral subatomic particles called neutrons moving at a great speed.

If you can halt this stream, and convert the energy to heat, you can drive a conventional electricity generator.

The problem is to separate these neutrons from the other particles. The answer is to hold the gas under a magnetic field. The other particles are electrically charged, and are kept in the middle of a metal doughnut-shaped metal, or torus.

The neutrons, bearing no magnetic charge, are free to move out of the field. The extreme heat is needed because fusion relies on collision between atoms of hydrogen, which become more frequent the higher the temperature.

The "doughnut" consists of two walls of metal, the inner wall being gas cooled, and the outer wall reduced to room temperature by water.

A similar project at Princeton in the US is six months ahead of Jet, but is based on a smaller torus. And size, they say, is everything in fusion.



Peter Cobb, managing director of Apple Computer (UK) presents an Apple computer and £250 worth of books and software to Keiran Walsh.

Prize programmer

WHEN Keiran Walsh began writing software for a London council while waiting to start university, he thought he was just doing a public service. But a year later the same software won him the coveted title of Apple Young Programmer of the Year.

Walsh, now reading computer studies at Manchester University, was presented with a complete Apple computer system worth £1,800 by Apple managing director, Peter Cobb. His program, written a year ago when he was 18, is still being used by Hillingdon Borough Council in London to help young offenders gain a sense of responsibility.

Workplace is compiled by Philip Hunter

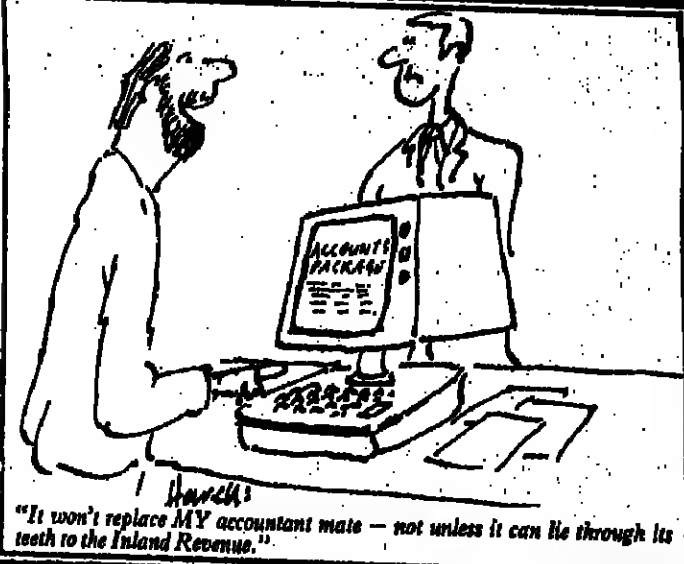
PUZZLER

A READER on the Continent has sent a most fascinating equation. I give it here in "alphabetic" form, so that you can try to work out the three digits involved before turning to page 53 for the solution.

abbb = abb = ab = a
bbbb = bbb = b = c

The remarkable thing is that the initial fraction retains the same value despite repeated cancelling of individual digits from top and bottom.

(The puzzle was inspired by a similar one in the book 'The Book of Numbers' by David Wells.)



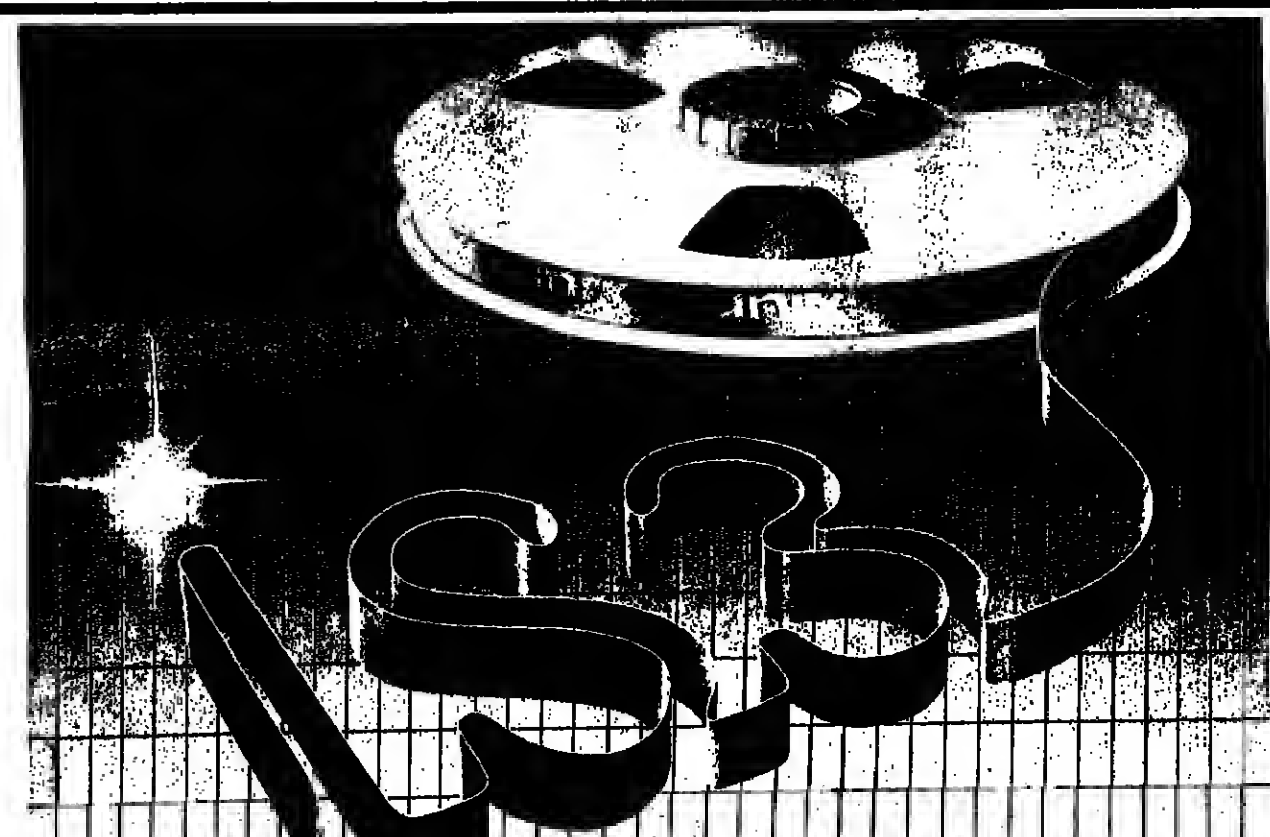
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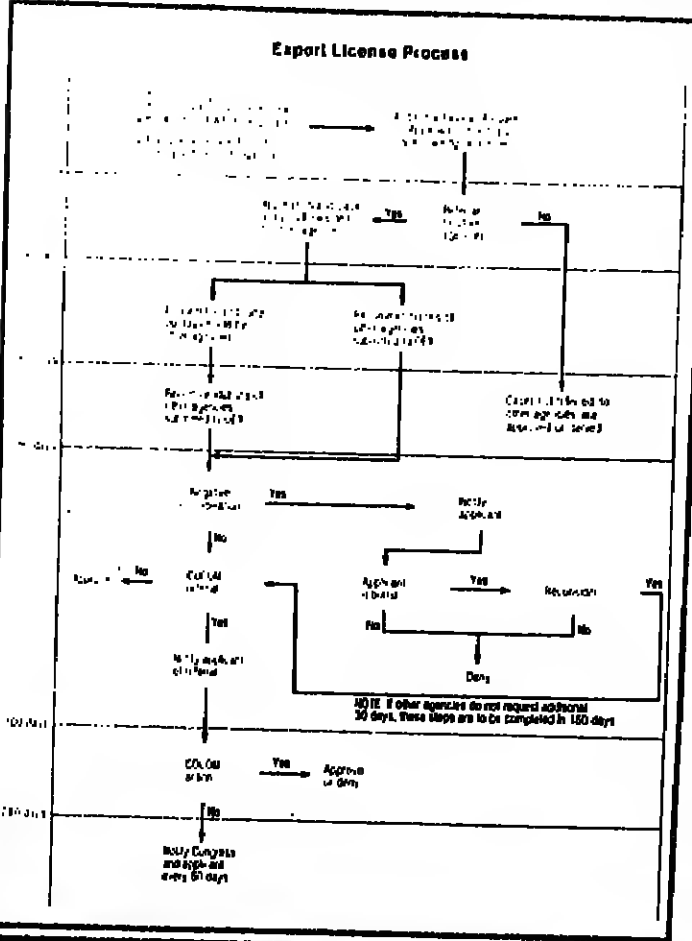
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US EXPORT ADMINISTRATION ACT



The US Congress is currently considering extension of the 1979 Export Administration Act. The proposed Bill, which would replace the Act, is concerned with protecting US national security and foreign policy interests. It is drawing widespread criticism. Alternative measures have been put forward in both the US House of Representatives and Senate, and the international business community has raised objections to what it sees as an unacceptable restraint to

Leading traders attack American export policy

"There is a danger that, in practice, administration of the Export Administration Act may serve to divide and weaken the Alliance, contrary to the interests of all its members."

THOSE are not the words of a political opponent of the Reagan administration in the US Congress, or of a troubled UK trade official. They come from the Council of the US Chamber of Commerce in London, and were publicly delivered to the US Under-Secretary of Commerce for Trade Administration, Lawrence

Brady, when he was guest at a luncheon there last week. Brady, in the best American spirit of jaw-jaw, accepted that and other criticisms made by the Chamber, saying he would present the opinions for consideration in the remaining committee stages of the Act.

The Chamber is the most prestigious US trade body abroad and numbers among its key members IBM, Burroughs, NCR, and a host of other computer companies. It is those firms, as well as companies like ICL which use US sourced components, that are most

trade. At the same time Cocom, the coordinating committee based in Paris, which has developed a system of strategic export controls, is becoming an increasing focus of attention. Members of Cocom are the US, UK, Turkey, Portugal, Norway, the Netherlands, Luxembourg, Japan, Italy, Greece, France, Germany, Denmark, Canada and Belgium. KEVIN CAHILL reports on the response of the US Chamber of Commerce in London.

at risk should the Act and its attendant Cocom lists go through in their current form. Much of the Chamber's statement is dressed in diplomatic and sincere expressions of solidarity with the objectives of US policy. However, in the second paragraph the deepest misgivings about the Act emerge.

"If differences in interpretation exist between various allied governments concerning the permissibility of certain exports, those differences must be resolved at the governmental level and not by sanctions arbitrarily inflicted on individual companies in the vulnerable export sector," says the Chamber.

But the heaviest tactical salvo in trade terms is delivered by the next sentence: "Sanctions against individual business enterprises caught between conflicting governmental policies should not be tolerated."

And the Chamber goes further: "The US government should not be granted the authority to prohibit imports from specific countries, unless those exports have been found to violate the laws of the country from which the exports were made or are a deliberate circumvention of US law through sham transactions."

The Chamber goes on to say that

The attempt by the United States to give extra-territorial effect to US law is not and will not be accepted by other members of the Alliance

even where there is an attempt to stop dubious transactions, it should be done through the international trade treaty known as the General Agreement on Tariffs and Trade.

The strength of the Chamber's assault, and the frustration which has led to it, are spelt out in the document given to Brady.

The Chamber told Brady: "Export controls in the past have often impaired the competitiveness of US-related enterprises. It has been the experience of Chamber members that, in many instances, despite demonstration to the Department of Commerce that competitive suppliers in NATO or neutral nations were prepared to export to an Eastern bloc country, the necessary US export licence was denied or delayed, with the result that the competitive supplier was awarded the contract."

In a slim reference to the argument that if we did not supply it, the USSR would merely accelerate its own technology, the Chamber said: "There were instances where the Eastern bloc had begun to design and manufacture its own components rather than rely on US-related exports."

This observation, based on the direct experience of the Chamber's members, flatly contradicts the US administration's view that this is not an important issue and also contradicts the view that the Soviets have based their missile technology on stolen American chips.

If the strength of language used by the Chamber is an indication of the emotions engendered by the issue, then one particular passage is worth noting. The Chamber recommends that the Department of Commerce should be permitted to do individual cases in isolation.

US EXPORT ADMINISTRATION ACT

Larry Brady, a commerce official in the US administration, explains to Kevin Cahill the need for export controls

Why US is keen to curb high-tech sales to Russia

THE Reagan administration view on the controversial Export Administration Act was put forward in London last week by Larry Brady, US assistant secretary of commerce for trade administration.

Brady, in an interview with *Computer Weekly*, agreed that export controls are a problem for the West, but only in isolated areas. That said, the electronics and the computer industries are central to attempts to curtail the flow of sensitive technology to the Soviets and Eastern bloc nations.

Electronics and computers are integral to all modern weaponry, Brady said. "We have tried to focus our controls on design, manufacturing and production facilities, while decontrolling the lower end."

But Brady admitted that Cocom, the co-ordinating committee based in Paris, had not yet fully dealt with computers, and that embedded microprocessors were a "very difficult problem."

Sources close to Cocom suggest that Winchester discs and megabyte memories could be included on the controlled lists — a possibility with enormous implications for the computer industry.

The object of US technology policy in relation to the Soviet Union and its allies is to preserve "legitimate" and the West's qualitative advantage, Brady said. "The Soviet Union cannot produce good computers. They are not very good in semiconductors, where the error factor is substantial."

But he added that the Eastern Europeans and the Soviets have

meetings going over export control issues. When we look at Cocom we do look at the economic cost, in spite of what everyone says.

"We are concerned with the loss of markets," Brady went on, but he told businessmen to be more realistic when thinking about markets in Eastern Europe.

"There is a myth in the business community that must be looked at very carefully. This is the myth that there is a vast market to sell to. Eastern Europe is almost broke."

He added that Eastern Europe has an immense problem in servicing its debt, and was limited in hard currency terms as to what it could buy.

The US imposes controls on commodities leaving the US and going to a third party, and also imposes controls if the goods are to be incorporated into a package that is going to be re-exported.

"That is where the rub comes in for Cocom allies," Brady said.

"We assess through intelligence agencies what is going on, and we have been working extensively over the last two years to formulate policy towards USSR and the rest of the Eastern bloc. Our conclusion has been that the Soviets have been helped immensely by technology leakage. We have worked with legal and illegal."

Brady noted that the US has negotiations underway in Paris with the Allies on a list of embargoed items. Those negotiations are classified.

He did say, however, that he thought substantial progress had

There is a myth in the business community that must be looked at very carefully. This is the myth that there is a vast market to sell to. Eastern Europe is almost broke

been able to reverse engineer more than is thought. Where they are limited is in their ability to develop their own industry, and to apply their ability to the production process. In Brady's view this arises because the Soviet system is "lacking in freedom, which constrains imagination and prevents them making the great strides they need."

To ensure that Western information technology companies do not help the Soviet Union, Brady is to oversee what could be the most politically divisive US trade law yet enacted — a new Export Administration Act, which is currently the subject of hearings in the US Congress.

The Export Administration Act of 1979, which the new Bill is seeking to extend, was the legal basis on which President Reagan attempted to impose embargoes on UK, French and German companies supplying equipment for the Soviet-European gas pipeline.

The new Bill would reinforce the government's extra-territoriality of the US President, extend control authority to foreign embassies in the US, and give the Commerce Department discretionary authority to impose penalties on US or foreign companies which evade the controls.

The international legal problems posed by the legislation have drawn strenuous protests from the British trade delegation in Washington. Brady emphasises that President Reagan had spent "a good deal of time in the National Security Council

been made in the area with the Europeans. "There have been two meetings at under-secretary level in the last two years. We have shared our intelligence with Western allies, and have shared with them what we think the Soviets want."

Brady reiterated that "impeding the military use of our technology by our adversaries is the most obvious national security aspect of the export administration programme". He also defined in unequivocal terms the object of export administration.

"The entire programme, then, is devoted to the management of our trade relationships with all foreign nations to promote the national security of the US."

Brady said the view that US export goals were inconsistent with national security were incorrect. "Trade and national security are more than ever related to one another."

He conceded that the way policy was promoted might have led to some misunderstanding among the Allies. "We regret the confusion, the lack of communication. Maybe we haven't explained ourselves very well, but we have done our homework." This included careful consideration of the cost of controls.

While admitting that a policy of controls such as the US intended to institute needed the support of the business community, Brady suggested that businesses themselves should have a vested interest in not having their equipment



BRADY... "The Soviet Union cannot produce good computers".

policies like those currently being pursued by the US administration is that, by depriving the Soviet Union of essential technology they speed the rate at which that country develops its own technology, so losing jobs in the West.

the need for rapprochement." Brady hinted at the price the US is determined to extract from the Soviet Union in terms of political concessions before de facto levels of trade in electronics and computers are restored.

The problem is that in order to ensure that the technology embargo works, the US is interfering more than ever in the flow of quite commonplace equipment from the US to its own allies.

In the case of the UK, nine out of the ten largest computer companies are American (ICL is Number 2). In many other European countries the level of dependence on US technology is even higher, 85% in Germany.

If the idea of technology driving eventual rapprochement implies positive moves in the future, then Brady was bubbling over with enthusiasm for China.

"We no longer consider China to be the same security threat as the USSR. They are just waiting for computers."

Brady has just returned from leading a trade mission of 15 companies to China and his statement that trade with China is now proceeding on a basis of US approval will be good news to the many UK companies trading from Hong Kong and hoping to do business in China.

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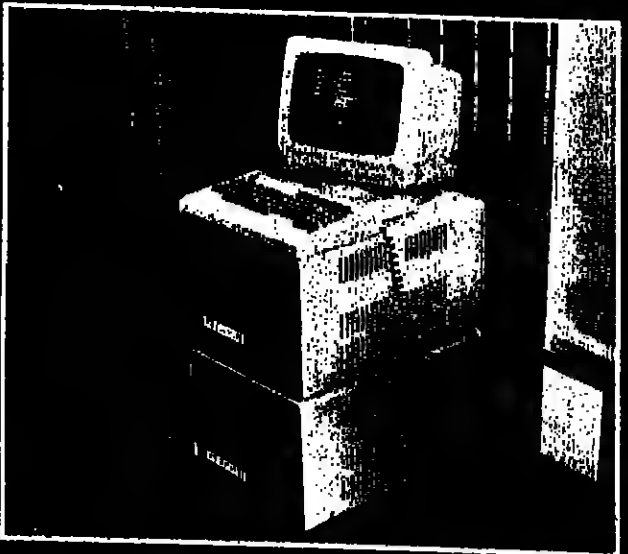
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Are you sitting comfortably? If not, then read on...

More emphasis is now being put on producing equipment that fits people rather than production processes... John Lamb reports

ERGONOMICS, literally the study of work, has long been a stick in the trade of advertising and marketing departments, but it is only comparatively recently that the work of professional ergonomists has been taken up in earnest by manufacturers' design departments.

Much of the research into how to produce keyboards, screens and desk areas that fit people rather than the demands of a production process has been done in Europe and supported by trade unions and public health agencies.

Germany and Sweden both have directives which lay down minimum standards for VDU design as well as guidelines on VDU working practices. Britain's Health and Safety Executive last week published its recommendations in a booklet called VDU.

This somewhat delayed publication follows earlier attempts by the white collar unions APEX and ASTMS to give their negotiators guidelines on the ergonomics of VDUs and to get them written in to new technology agreements.

None of these directives or guidelines has the force of law, but in Germany in particular they have had a big impact on the sort of equipment large organisations are prepared to buy. Not only have these customers negotiated labour agreements which forced them to buy equipment that adheres to good ergonomic design, they face insurance penalties as well.

The German organisation that produced the country's standards, the Beisugenssenschaft, also arbitrates in claims for industrial injury. If employers have bought equipment which falls the standards and an injury follows, they may find their insurers will not meet claims.

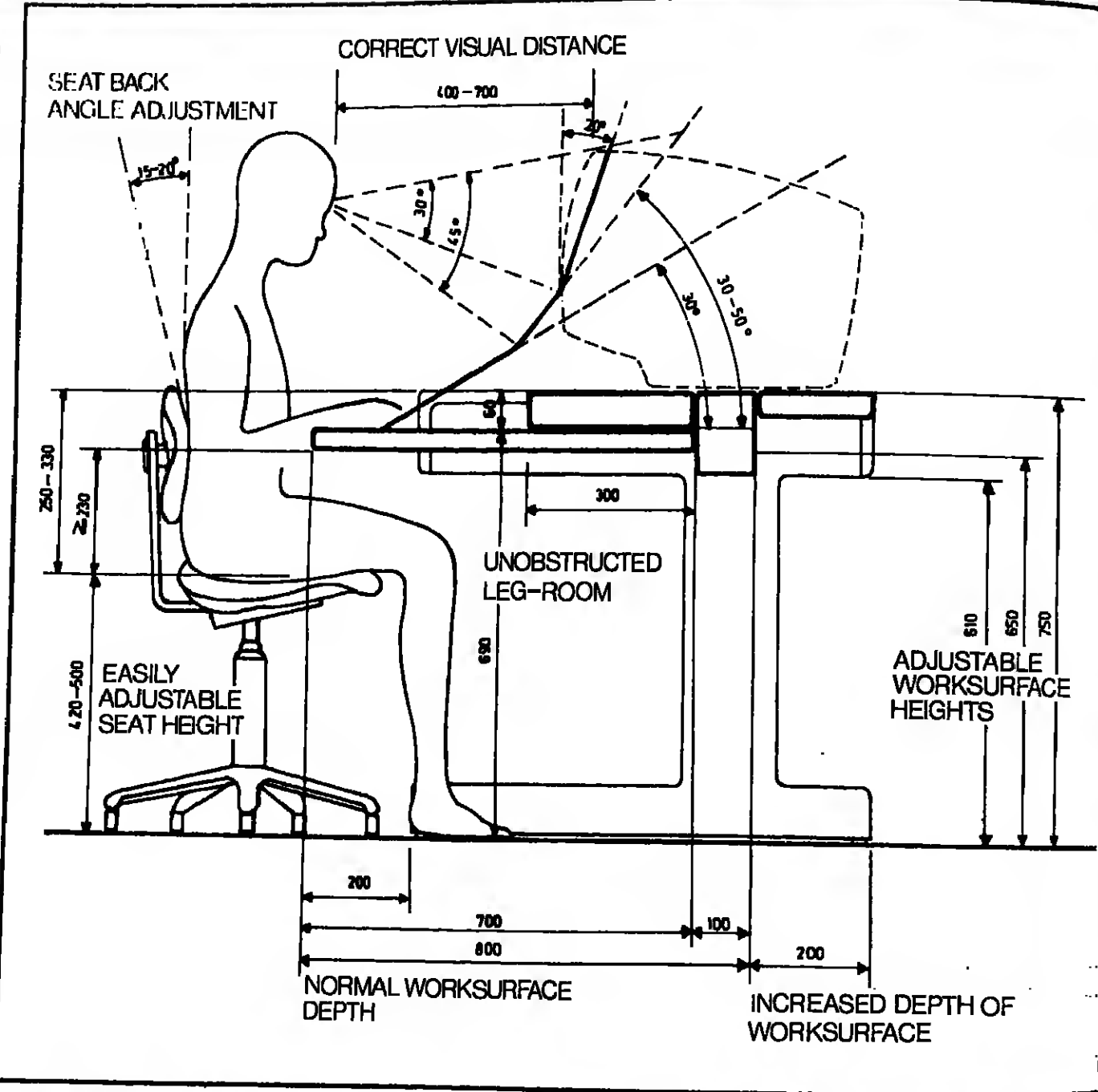
The upshot of this is that Europe is ahead of the US in demanding that VDUs are designed so that they cause the minimum of stress to their users. US manufacturers have been losing business, particularly in Germany - Europe's largest market for computers - because their products were not up to scratch.

This was the case with Burroughs which recently launched the ET range of terminals and workstations. The company had to redesign the terminals to specifications laid down by its own Human Factors Laboratory, set up two-and-a-half years ago. Burroughs was worried enough to call in a leading Swiss expert in the field, Professor Etienne Grandjean, who had been retained by several European users.

According to Grandjean, ergonomics is still in its infancy. The standards are not yet matured, manufacturers have little knowledge of the subject and are still inclined to use the word ergonomics misleadingly in advertising. However, he does see a trend among manufacturers to seek professional advice on ergonomics.

Besides Burroughs, Grandjean has been retained by STC, Kienzle, Nixdorf and several banks, as well as other users. But what is an ergonomically designed terminal? In a sense it is a contradiction in terms, because all tools used by humans are more or less well designed from an ergonomic point of view. There is no such thing as a terminal that does not reflect ergonomic factors; the question is how well fitted is it for the task in hand.

One of the ergonomists' hitles is the VDT Manual drawn from work by Calkin, Hart and Stewart. Published under the title Visual



Display Terminals by John Wiley & Sons, the manual has formed the basis of several union agreements with management and has contributed to government standards setting.

The book sets out to examine how VDUs can affect their users. The size of text on a screen, the brightness of the screen, the tendency for screens and indented tops of keys to reflect light, radiation and the amount of pressure that has to be exerted to depress a key are just some of the factors examined in the book.

Burroughs' ET series - there are two distinct ranges, the ET 1100, a straight replacement for the TD 800/MT non-programmable terminal, and the ET 2000 which is a 16-bit microcomputer - incorporates some of the ideas contained in the book.

First, the company has built in controls for adjusting most of the things that can be made to move. So, the tilt of the screen, its height from the pedestal and its swivel

can all be altered. The screen's height can only be altered by three inches, but this is enough to cope with 90% of male and female operators, leaving only 5% of people at either end of the spectrum who will not be able to cope with the screen. The tilt of the screen is adjustable so that operators cope with the screen. The tilt of the screen is adjustable so that operators can get the best

viewing angle (20 degrees below the horizontal say the ergonomists) and move it to get rid of glare. There is some debate in ergonomics circles about whether a screen should display dark characters on a light background or light characters on a dark background (positive or negative polarity).

Burroughs has also put some effort into the choice of a tube for its VDUs. It has a finely etched outer surface which diffuses light, cutting down on reflections. The phosphor inside the screen has been chosen to retain the light produced by the electrons striking it for roughly the same time as it takes to get another shot of electrons. In the jargon, the persistence has been integrated with the refresh rate.

The characters used in the ET series, which has a 14 inch screen, are made up from an 8x18 dot matrix. Each character is nine dots high or 3.24mm. This is generally reckoned to be the best size for the normal viewing range of between 500 and 700mm.

Burroughs' Human Factors Laboratory also designed a type script with true descenders which help in recognising each character.

Another important factor in VDU design is the keyboard, which must be comfortable, used above all else. Burroughs has used light sensors inside the keyboard to pick up characters. Each time a key is hit it breaks a small infra-red beam. This has allowed the company to make its keyboard flatter, 60mm high at the home row (the

Burroughs has plumped for light characters on a dark background, partly because positive polarity requires the electron gun to sweep across the screen more often to prevent the characters flickering and also because it can cause glare. In any case the background can be adjusted so that operator's eyes are not tired by jumping from a bright white piece of paper to a dark screen, as well as the overall

centre tier of keys). Each key has been hollowed out in a cylindrical shape to cut down reflections from the key stops. Most keyboards have dish-shaped keys which tend to reflect light. The banks of keys are arranged so that the tops are set at different angles to take account of the way skilled typists hold their hands.

The keys also give a typist some feedback. They click when contact with the beam has been made (the clicking noise can be adjusted); at the same time the amount of key pressure needed to push the key down suddenly slackens off. This is said to enable typists to get a rhythm going.

Very fast typists can often be held back by their machines which fail to recognise the order in which they have been pressed. Many keyboards have a feature called N-Key rollover which recognises which key was pressed first even though other keys may have been pressed and released during the time it took to operate the first one.

Typists who hesitate slightly between pressing and releasing a key can end up with duplicated characters. To combat this Burroughs has incorporated a technique called hysteresis into its keyboard. There is a slight difference between the trigger and release point of the key.

According to Grandjean, ergonomists still have a long way to go before they come up with a standard design or the perfectly ergonomic VDU, but he believes it is possible.

Many of the factors which make for comfortable operation are outside the scope of a VDU design - things such as the position of a VDU in a room, the kind of wall coverings, desks and chairs that are used, and so on. Perhaps the biggest drawback to ergonomic research is the fact that whether people are happy with their machines quite often has nothing to do with design or environment. It has to do with the people they work with and the organisation to which they belong. Industrial psychologists have yet to measure these things in millimetres and candellas.

PRODUCTS

Now for a paperless shop floor

PAPER could disappear from shop floors and warehouses with the advent of a low-cost, and portable data capture system which feeds stocktaking information straight into the mainframe. The system, called Entry Manager, is based on the Epson HX20 hand-held micro, which works on batteries.

It is being sold by IMI Computing, the subsidiary of metals giant IMI which recently departed from its bureau roots to enter the systems market.

Entry Manager brings a new option for warehouses and companies whose stock may sprawl over several acres. Up to now they have been limited to a centralised system with stationary terminals (usually tucked away in a "clean room") which can access the mainframe but still has to rely on pieces of paper, or a local network system which does not run to the power of a mainframe. The arrival of a portable micro capable of linking with the mainframe means that information can be fed in on the spot, and transmitted to the central computer.

"Any point where events or items need recording with minimal paperwork is the point where Entry Manager works best," said IMI managing director David Williamson. "The system is faster and more accurate than manual recording, cheaper and more powerful than interactive systems, and more powerful than a local system."

Another advantage cited by IMI for the Entry Manager is that it will be able to interface with most mainframes. "The Epson is linked

to the mainframe via a modem, along a BT line, and then into a protocol converter," explained IMI's project manager Ian Hewlin. "The Cortex protocol converter can be configured for most mainframes including ICL, Honeywell and IBM." However Hewlin doubts that stocktakers will be able to treat the HX20 like a "pocket" machine. "It's true that it's hand-held but I'd think that after a quarter-hour it would get too heavy," he said.

As yet there are no major customers for the system, although parent firm IMI has been evaluating it for several months in its own stocktaking jobs at depots and warehouses. The system is fully programmable, and written in Basic. The cost depends on how the system is configured, but is likely to be about £1,000 per station. IMI Computing (CW), PO Box 216, Witton, Birmingham B6 7BA. Tel: (021) 356 4848.



More software for Alpha microsystems

ALPHA Microsystems (Great Britain) has introduced an implementation of CP/M and AlphaRJE, a communications software product, designed to link with IBM's bisynchronous 2780/3780 protocols.

Alpha Micro now provides the 2.2 version of CP/M for use with either the new AM-1003 serial expansion board for AM-1000 systems or the new AM-330 data communications controller for use with AM-100L-based systems.

In Alpha Micro's implementation of CP/M, all I/O functions are handled by AMOS/L. Most of the AMOS/L file back-up routines and all AMOS/L-supported discs may be used.

When used on the Alpha Micro,

CP/M may be called up from any terminal connected to the system.

This capability provides far greater access in CP/M on one system than is offered by most other companies, says Alpha Microsystems. For example, one person can run SuperCalc on a terminal in the accounting department for financial planning. A different user can then run a CP/M-based Pert program on a terminal in the engineering department for project management. If one department attempts to use CP/M before another is finished, a message is displayed saying that CP/M is in use.

In addition, since the Alpha Micro is a multi-user system, one person can run CP/M programs

while others use AMOS/L. The ability to run CP/M and AMOS/L programs concurrently, plus increased access to CP/M, provides a versatile and powerful marketing tool.

Prospective end users can upgrade from a single-user CP/M-based system to a multi-user AMOS/L environment and still use most, if not all, of the CP/M software they have previously purchased.

AlphaRJE is a new software product that is used with either an AM-1003 board or an AM-330 board.

Alpha Microsystems (GB) (CW), 56 Herschel Street, Slough SL1 1PY, Berkshire. Tel: Slough 821922.

Drawing from intelligence

THE flagship of the Watanabe Digital Multiplex XY Plotter range is the WX4636, an A3 size 10-pen model, offering 43 high grade intelligent functions.

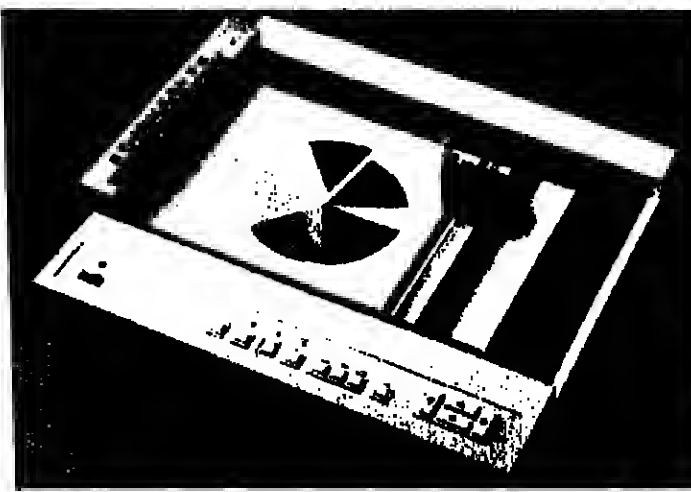
The WX4636 is one of 20 Watanabe plotters ranging from A4 (210 x 297 mm) to A0 (841 x 1189 mm), with two, four, six, eight and ten pens versions also available, supplied exclusively in the UK by Environmental Equipments (Northern).

The WX4636 is available in flat bed form taking individual sheets which are held in position by an electrostatic holder, to maintain the fine tolerances required.

Alternatively, a roll chart version can be selected, which supplies a continuous feed of paper and enables the plots to be extended if required, beyond the length of the A3 area, or multiple plots to be drawn without operator supervision.

Each of the ten pens can be picked up using Watanabe's unique power magnetic system. Fibre tip (water or oil based), ball point, roller ball, or drafting ink pens can be selected in a variety of colours. Pen speed is selectable in 10 steps from a maximum of 400mm per second. Another version of the plotter is available with a 250mm per second maximum speed range. The WX4636 can be interfaced

with most types of mini, micro or mainframe. Three plug-in interfaces are available, the RS232C, Centronics or GP-IB (IEEE). The interface incorporates a 1.6 Kbyte buffer memory which enables the computer to pour in a series of complex commands. Environmental Equipments (Northern) (CW), Enniscorthy House, Welsh Row, Nantwich, Cheshire, CW5 5ES. Tel: (0270) 625115.



The WX4636 Digital Multiplex Plotter A3 size with 10 pens.

Link to public data services

THE Teledek TI, a device that allows almost any standard terminal, as well as the DECmate II personal computer from Digital Equipment, to connect to the public data services, is announced by Hamilton Rentals.

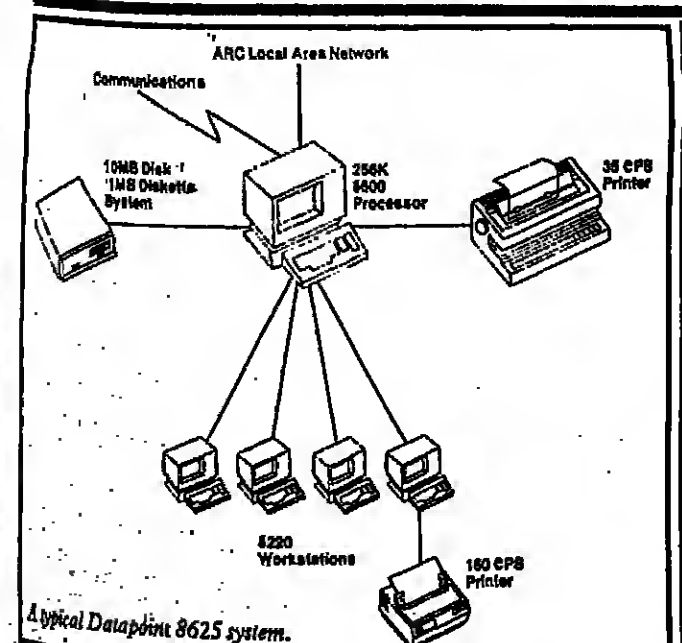
It is an intelligent modem which, by storing telephone numbers and sign-on codes, can automatically connect to such data services as Prestel, Dialcom, the Eurolex and Dialog databases and private viewdata networks. It connects to a standard RS232 communications port, and the telephone line.

Hamilton sales manager Nick Moulton commented: "As the number of data services increases, so the demand for cheap and flexible communication grows. More public and private information services are available on the telephone networks than ever before but, until now, the terminal has had to struggle with the complexities of logging on and the incompatibility between terminals and services. The Teledek TI eliminates these problems and makes a wealth of data services available to the small business user at a reasonable cost."

The Teledek TI incorporates a modem and a two-dialler. It handles screen formats, displaying 40 or 80 characters per line as required, and converts incoming and outgoing data codes to provide compatibility between the host system and the external data services.

The Teledek TI stores telephone numbers and sign-on codes, so that the user only uses two or three keystrokes from the keyboard to initiate automatic connection to a required service.

The Teledek interface can be rented from Hamilton for £23 a month, or purchased outright for £450. Delivery is ex-stock. Hamilton Rentals (CW), Hamilton House, North Circular Road, London NW10. Tel: 01-961 6777.



Disc configuration for Datapoint systems

AN entry-level disc configuration for the 8600 series systems and new DOS-based system have been introduced by Datapoint (UK).

The new DOS communications disc supports the 8600 systems to take advantage of 8600 hardware without modifying their software, says Datapoint.

The entry-level 8625 system includes a 10 Mbyte Winchester disc, a 128K memory, a serial port for a terminal, and an Arcnet local area network interface. An additional 128K of memory can be added.

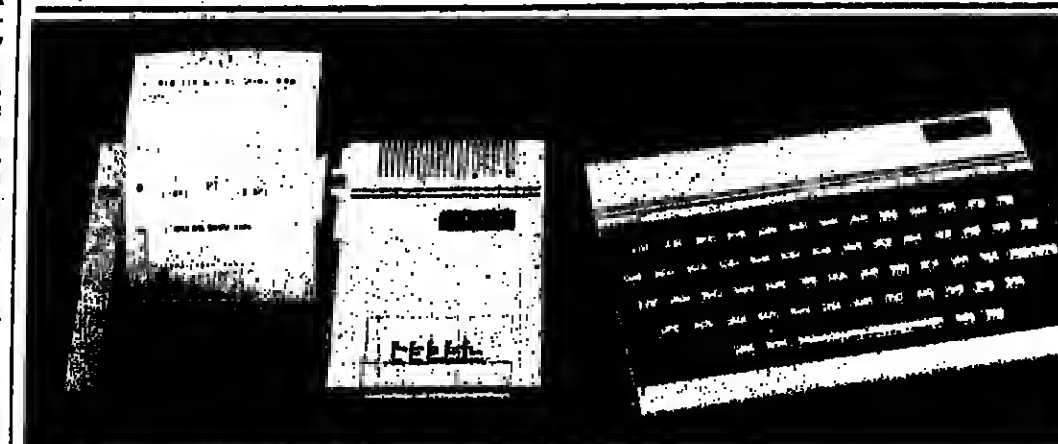
The Winchester disc system is suited for standalone applications or as a remote site in a network.

"The 8625 10 Mbyte disc/1 Mbyte diskette system provides the processing power, memory and disc storage to give a very efficient dispersed data processing capability with the added value of the proven Arcnet networking technology," said Brian Gifford, managing director of Datapoint (UK).

The 20 Mbyte disc/20 Mbyte streaming tape 8630 system provides 20 Mbyte of direct access data storage with an advanced tape drive capable of storing 20 Mbytes of data.

Designed for operator convenience, the 8630 disc system can spool information from disc to tape or tape to disc automatically. The cartridge can be used for selected file copy as well as system backup.

Datapoint (CW), 400 North Circular Road, Neasden, London NW10 0JG. Tel: 01-459 1222.



The Oric colour printer - the first peripheral for the Oric I microcomputer.

Oric's first peripheral is now ready

FIRST peripheral for the Oric I, a four-colour plain paper printer, is now available in retail outlets at £169.95 (inc. VAT).

The printer, which features the Alps mechanism and an internal power supply, comes with a connecting lead. No other accessories are required. The Oric-colour printer (MCP40) is plugged directly into the Oric expansion port and can be used with both

48K and 16K models. The four colours - black, blue, red and green - are provided by rolling ball point pen dispensers. The printer features full alphanumeric capability and graphics specification. Sample programs are included in the comprehensive manual.

The Oric colour printer measures 10 3/4 in wide, 6 3/4 in deep

and 2 1/2 in high lowering to 1 1/2 in at the front and is identical in colour to the Oric Micro - a soft grey with blue stripes. The printer runs on 220/240 volts.

The Oric can be used with any microcomputer having a Centronics interface. Oric Products International (CW), 24 Eaton Drive, Kingston-upon-Thames, Surrey. Tel: 01-546 5144.

Floating Point memory extended to 58 Mbytes

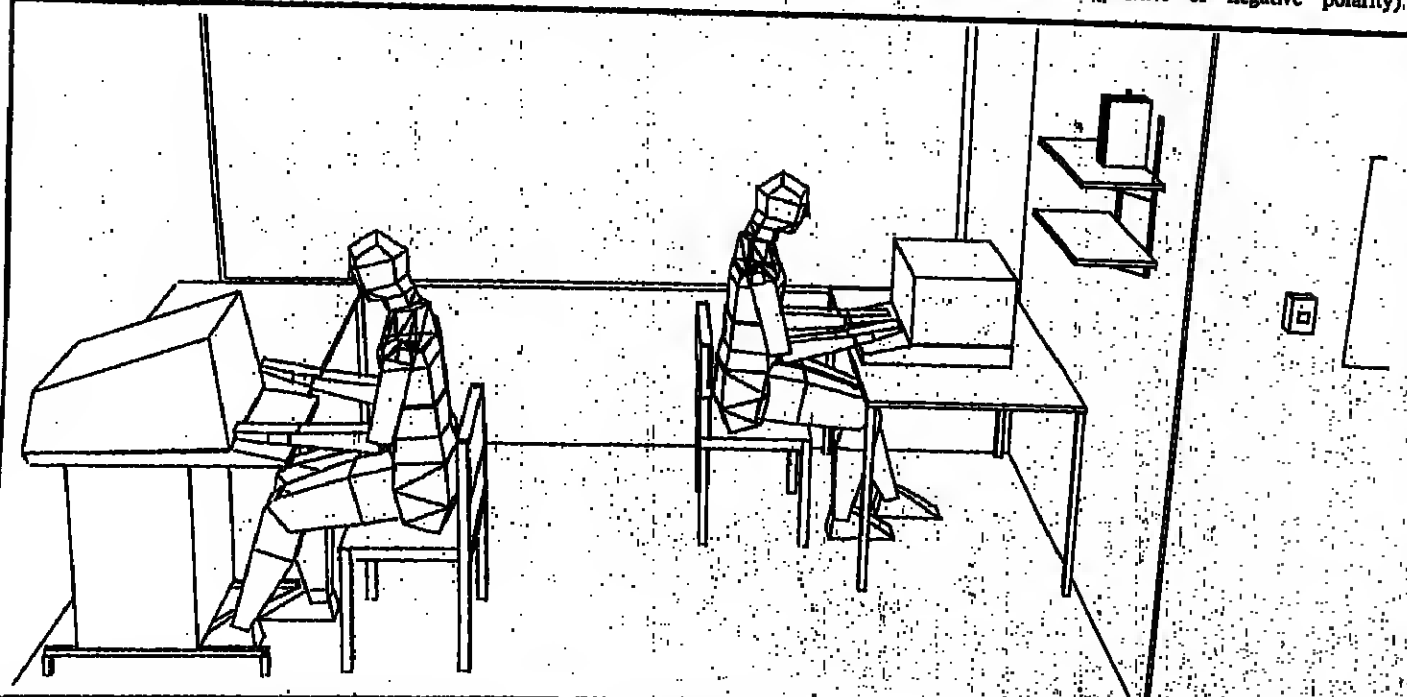
FLOATING Point Systems, has announced an increase in the maximum memory size of the FPS-164 from 14.5 to 58 Mbytes. Users can now select from 11 optional main memory sizes.

Russ Gadd, sales manager for Floating Point's Northern European region, explained: "Larger memory will provide

users with more detailed resolution of computer models in such applications as structural analysis, oil reservoir simulation, and computational physics and chemistry. The expanded memory will also reduce the need for disc storage for intermediate results. This will mean fewer disc-to-memory transfers and consequently even faster

program execution by the FPS-164. The FPS-164 is a high speed scientific processor that attaches to computers from DEC, IBM, Sperry and Apollo Computer.

Floating Point Systems (CW), Dudley House, High Street, Bracknell, Berks. Tel: (0344) 569212.



One operator in the terminal room should be sitting.

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Candidates should have a minimum of 2 years Cobol programming experience, including some interactive development. Experience of database or H.P. machines would be an advantage, but

neither is essential as appropriate training will be given.
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Northern Telecom Data Systems are seeking experienced salesmen in the South East who, having shown evidence of a track record of success in computer sales, will be charged principally with responsibility for the generation of new business.

1983/84 will undoubtedly prove to be yet another milestone for Northern Telecom - if you feel that your career could benefit from an association with an organisation synonymous with excellence, contact **Andrew Carter**, Director on 01-935 0671 or submit a career resume to him at the London office.

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Avenue Louise 327
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Senior Systems Programmer/Network Consultant

New senior appointment in Sharp End Technology Centre

London c.£20,000, car, benefits

for the computer services division of a £400m turnover international financial institution with a DP budget exceeding £10m. for Fiscal '83. The division is committed to operating via large scale, multiple site, IBM mainframes, SNA, twin MegaStream links, X21 protocols, and over £2m worth of word processing equipment linked into the network. This is an important new senior appointment which reports to the Technical Facilities Manager, and you will play a significant lead role in the whole SNA area. If you are an exceptionally experienced candidate, you would probably have the Network Control Group reporting directly to you.

You must have over 5 years IBM systems software experience: fluency in ACF/NCP, ACF/VTAM; solid experience of MVS; IMS/CICS exposure preferably; and have been involved in Networking for about 3 years. Your overall experience in DP should exceed 12 years and you should be able to operate in a dual role capacity of Consultant/Designer, and as Systems Software Specialist.

Our client believes in providing excellent responsibility related salaries. In addition to a starting salary there is a range of superb benefits, including a company car. The successful applicant will be based at the head office complex in the City.

Please send fullest details of career and experience, or request for an application form to ANTHONY SPURR, Manager, Executive Selection Division, quoting GW1135 at the address below.

4234

BIS Applied Systems Limited
York House, 199 Westminster Bridge Road
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PRODUCT MANAGEMENT

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Both positions offer ambitious sales/marketing/engineering professionals a superb introduction to running a small business sector; indeed, the roles are excellent training grounds for early general management within the organisation. If you seek responsibility and challenge in a results orientated environment call us to-day.

For further information, contact Paul Child or Martin Warner on Windsor (07535) 56155 or write to
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SENIOR SYSTEMS ANALYSTS

Rediffusion Business Electronics Ltd are leaders in the field of Business and Industrial Communications systems and are seeking two Senior Systems Analysts, one based at Buntingford, Surrey, and the other at Orpington, Kent.

Applicants should have an in-depth experience of designing real time VDU driven systems covering a broad spectrum of business use. Knowledge of Rediffusion Computer equipment would be an advantage.

Salary £18,000 pa according to qualifications and experience. Excellent working conditions and security of employment.

Please contact John Jennings, Personnel Manager, Rediffusion Business Electronics Ltd, Rediffusion House, 214 Red Lion Road, Buntingford, Surrey, KT9 7RP. 01-387 5133.



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Business Electronics

Technical Planning Specialist

up to
£15,500
+ car + benefits

Wiltshire

As a major IBM installation enjoying considerable growth and expansion, we are very conscious of the need for continual appraisal of our computing facilities in order to meet the ever increasing demands of our users.

A large installation requires cohesive technical planning and control, and we believe that with our strategy for further considerable expansion, we must be progressively raising the level of our capacity management function.

We are therefore seeking to recruit a Technical Planning Specialist, not merely to contribute effectively within the existing function, but more importantly, develop and elevate it to a higher level of operation.

Specifically we seek a true DP Professional with a substantial track record, probably within systems programming or technical support, and having recent experience associated with a capacity management or computer performance role.

Our installation comprises of IBM 3081G and 3031 mainframes running MVS/SP 1.3, ACF/VTAM, IMS/VS 1.2, TSO, APL, ROSCOE, SAS and much more. New plans include major on-line systems, micro technology, convergence of data and text, MVS/XA and VM.

As a Company we offer excellent career prospects and a substantial income package which includes non-contributory pension, BUPA, profit sharing and a generous relocation facility for a move to Wiltshire.

To arrange a confidential interview, please contact the Advising Consultant, **Martin Stainthorpe**, on **021-236 3761** (24 hour answering service) or on **021-744 1862** (evenings 7-9 pm and weekends).

(4267)

Specialist Computer Recruitment Ltd

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Outstanding opportunities in all areas of the USA

We are looking to recruit a number of computer professionals for one of the largest computer services companies in America. The positions are in all areas of America and we would like to hear from people with the following experience. Salaries will depend on your experience.

**Project Leaders
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A number of people are required specifically in the West Coast and the South of the USA for top level development projects.

**Analyst Programmers
Programmers**

PL/1 experience
with IMS or CICS
some exposure
to COBOL

Again, a number of professionals are required for positions all over the United States.

**Technical Specialists
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Consultants**

UNIX
and C

The fast moving world of UNIX and C offers opportunities for technical people to work in New York State and other areas.

**Analysts
Programmers
Designers**

**BURROUGHS
LARGE HARDWARE
COBOL GEMCOS DMS**

Again a number of people are required for a variety of projects all over the USA.

Interviews will be held in our London headquarters at the end of June/beginning of July. To find out further details on these positions please ring Douglas Woodward or Janet Chilvers on 01-734 7394 during working hours or after working hours on 01-627 2813. Alternatively please send in your career details to Warwick Woodward, Freeport 37 (No stamp needed) London W1E 6UZ marking it 'USA'.

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Business Systems Advisor

Good salary with excellent benefits and an outstanding relocation package

Our client, a highly successful computer user, is based in a very attractive area of the South Coast of England. Their wide use of computing over a wide range of hardware from mainframe to micro is beginning to play an important part in both user thinking and demand. Because of this demand they now wish to recruit someone to work as a Business Systems Advisor. An unusual and particularly interesting position, the job requires someone with either a good business systems, an O & M or an OR background, to advise people at a variety of levels of seniority on the development of systems.

The responsibilities are very broad, but in general terms will necessitate significant liaison with users to determine business solutions to their problems. The majority of solutions would probably involve some kind of computer aid, and therefore a knowledge of micros and word text processing from the conceptual point of

view is a useful asset. Ensure that they agree and accept the solutions presented, and at the same time where necessary discuss with the computer systems group the user requirements.

If you feel your experience and interest is in the business area and you have a broad technical base, then we would like to meet you.

Without doubt, this is a very interesting opportunity and will allow someone over a period of time to develop a very interesting career. We would like to emphasise that we are looking for someone who is primarily interested in helping to determine the basic framework of an integrated technology based system in a diverse business organisation.

If you are interested please send a curriculum vitae, giving contactable telephone number.

RECRUITMENT LIMITED

Sentry House, Frimley Road, Camberley, Surrey
Tel: Camberley (0276) 21213 (24-hour answering service) Telex: 858386

Our Client is part of a large, multi-national Group of Companies, currently engaged in the implementation of a network of interactive minicomputers throughout the UK. During the coming months, Hewlett Packard 3000 minis will be installed at each of the Company's Regional Offices, each machine being central to the Region's processing needs.

One such regional office is located in the historic town of St. Ives, situated on the River Ouse just a few miles from Cambridge. An HP 3000/64 is planned for delivery in the Autumn and, in preparation, our Client now requires the services of an experienced Operations Manager, who will play an integral part in the establishment of this new installation and its associated communications facilities. The new machine will support some 53 terminals, mainly remote, and a laser printer.

The ideal applicant will be fully experienced on the Hewlett Packard 3000, having a good knowledge of both hardware and communications and the ability to manage a

small team of staff. Once the physical installation of the machine has been completed, the Operations Manager will be responsible for producing manuals, setting up procedures and schedules, thereafter functioning as the interface between Administration Managers throughout the Region and the Information Services Department.

This is a very interesting challenge for a mature person with the required level of expertise. Furthermore, good promotional prospects exist within the Organisation, giving the successful applicant excellent long term career opportunities within a well-resourced, well-managed Group of Companies.

Candidates with sound experience of HP 3000 Operations Management should forward a concise CV to **Ian Payne**, Supervising Consultant at the SCR Birmingham office to arrive before the end of June.

Operations Manager

St. Ives, Cambridgeshire
c.£10,000 plus relocation

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(4258)

Office automation/L.A.N. Designers

for a growing innovative company (seven vacancies)

Central London Salary ranges to £20,000

The recent announcement of the MicroNode and the huge response its editorial coverage received means Xionics is set to expand. The designers we seek will be ideas men/women possessing the skills to implement their ideas through to pre-production.

You will need to be experienced in one or more of the following areas:

Multi function workstation software
Continuous improvement and the will to keep one step ahead means we need people with expertise in: word processing, graphics, printer drivers, emulation, user friendly interfaces, multi-user operating systems.

Network and communication systems
New networks and new enhancements require high calibre designers versed in: L.A.N.s, fibre

optics, network interworking, layered communications protocols.

Test software

To ensure the successful implementation of our advanced network systems, designers/programmers are sought to provide tests and diagnostics software for Xionics' multiprocessor systems.

Engineering

Highly skilled hardware designers/engineers experienced in microprocessors, multiprocessor architectures, communications, high speed digital networks/circuits will be able to contribute to planned products ranging from high speed L.A.N.s to high definition colour workstations.

Xionics future success will depend on the dedication and skill of our development staff.

To join the professional and self-motivated people who make up our development teams, you will need to be able to work unsupervised in a team environment, have communication skills, commitment and energy.

If you feel you can contribute to our continued growth, apply in writing **ONLY** to Ian Richardson enclosing a full c.v., or ring George Shaw at Sloangate on 01-549-9236, for an application form which should be forwarded directly to us.

Xionics Limited,
a subsidiary of **Smiths Industries PLC,**
Dumbarton House,
68 Oxford Street,
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W1N 9LA.

Sloangate Recruitment Advertising Limited
Dominic House, 171-177 London Road, Kingston-upon-Thames,
Surrey KT2 6RA. Telephone 01-549 9236

XIONICS Sloangate

Recruitment Advertising

Systems Analysts

up to £13,500

We are now completing the transfer of our Information Services Department to Aylesbury and have a number of challenging opportunities for experienced Systems Analysts to join our international company, implementing a plan for distributed processing using IBM 4331 computers.

As a member of a small team operating in a multi-project environment, you will be responsible for developing and implementing a wide range of business systems, liaising with the user departments which include Finance, Marketing, Manufacturing and Distribution.

Ideally you should be an Analyst with at least 4 years' industrial or commercial experience, designing and implementing both batch and on-line systems and be able to communicate effectively with both technical staff and users alike.

Benefits include a generous starting salary, membership of BUPA and a contributory Pension Fund.



Please write for an application form to: Mrs. P. J. Lilley, Personnel Officer, Carreras Rothmans Limited, Oxford Road, Aylesbury, Bucks HP21 8SZ.

4284

LONDON DOCKLANDS NEW TECHNOLOGY CENTRE

Centre Manager

Starting Salary up to £13,000

London Docklands Development Corporation, in its efforts to create jobs and initiate training for new skills, is the main sponsor of a new Information Technology Centre. This Centre will at first offer 30 training places for unemployed school leavers to gain skills concerned with the application, manufacture and maintenance of electronic, computing and word-processing equipment. There is now a need to appoint a Manager for the Centre, responsible for starting up and managing the

whole training activity. The ideal candidate will have been responsible for the management of systematic training in the computer or electronics industry. It is also essential that he or she can appreciate the special needs of training school leavers. Please write in the first instance for an application form to me, David Lowman, Personnel Manager, London Docklands Development Corporation, West India House, Millwall Dock, London, E14 9YJ. An equal opportunity employer.

(4241)

SENIOR SYSTEM PROGRAMMER

c£13000 p.a.

Barclays Bank operate eight mainframes (3081D and 3033U) using MVS/SP.3 and MVS/XA. We have a requirement to strengthen our system programming team and are seeking people with at least eight years data processing experience, of which at least four should have been in an MVS system programming environment. A knowledge of Assembler is essential and experience with either TSO or VM/CMS would be useful.

The salary envisaged would be circa £13000 p.a.

The normal fringe benefits associated with working for a major Bank will apply, including a non-contributory pension scheme, subsidised restaurant, excellent sports and social facilities and a profit sharing scheme.

Application forms may be obtained from:

Ken Colebrook, Manager (Personnel),
Barclays Bank PLC,
Management Services Department,
Radbrooke Hall, Knutsford, Cheshire WA16 9PU.
or Tel Knutsford (0565) 3888, Ext 2743 or 2744.



BARCLAYS

UNIX Designers

Herts. c. £12,000

Joining a new development team offers extra opportunity. New product development offers a design challenge and the area of office systems products offers the growth market for the future. All of these are open to skilled operating system software designers with some UNIX experience. Our client is large and successful. They offer long term prospects.

Contact Terry Harvey

HP3000 Team

Bucks. £7.5K to £12K

An extremely successful, high technology company is seeking to expand their D.P. Function and requires several key personnel immediately. **Team Leader** - Minimum 3 years COBOL, D.B. and T.P. background. **Senior Analysts** - Sales order processing, 3 years business systems, structured analysis, D.B. Administrator - Data analysis, modelling, access techniques. You will work with IMAGE on new developments.

Contact Terry Harvey

Networks: Proj. Leader

Herts. to £16,000

Systems and software people with a networking background are required for this company with a worldwide reputation for communications equipment. Of particular interest is contact with any of: X25, PAD, C, M68000, SDS, cross-tools, communications and networks. You should also be able to move freely across the hardware/software boundary in a development environment.

Contact Brian Coates

Micro Support

West London to £11,000

A flexible nature, smart appearance and driving licence are essential for this position. Ideally a graduate, you will have had experience of most of the following: FORTRAN, COBOL, ALGOL, PASCAL, C, IBM Comm, Databases. You will be supporting our client's 16-bit micro, running UNIX, for the dealer and distributor network both by telephone and direct visit.

Contact Brian Coates

Head of Test Engineering

Bucks/Cambs. £9K to £11K

We have two clients who are established designers and manufacturers of micro computers who wish to appoint experienced test engineers to be heads of test departments. Candidates must have INEC level electronics with the ability to set up test procedures, write test specifications and procure the appropriate test equipment. Excellent prospects through company growth.

Contact Terry Harvey

Analyst/Programmer

Luton c. £9,000

This position will appeal to programmer/analysts who would like the balance of their work to swing more to analysis. You will need to have proven experience in commercial applications and as some programming is necessary you will require VAX/Basic experience. Our client is part of a large, successful multinational organisation with appropriate benefits.

Contact Terry Harvey

PRIME COBOL

S. Herts. £9K to £11K

We would like to hear from analysts/programmers with a minimum of 2 years experience of commercial/business applications. Our client has a small, friendly development team which is expanding to meet continued increase in business. They prefer people with team spirit and business awareness. Knowledge of Fortran and some assembler could be useful.

Contact Terry Harvey

Systems Software

Berks. c. £12,000

An established and successful minicomputer manufacturer has additional requirements in their software development centre. We would particularly like to hear from operating system specialists who can contribute in the area of system resilience and from data management specialists who have DBMS experience. Ideally you will have previous assembler development programming experience.

Contact Terry Harvey

Software Lecturers

Bucks. to £13K + car

We are seeking experienced professional lecturers to join an established and extremely well equipped training centre which functions as an integral part of our client's support organisation. It is essential to have T.P. applications experience with in-depth knowledge of data analysis, Data comm., and DBMS knowledge would be a welcome bonus. Excellent career prospects.

Contact Terry Harvey

Real-time Progs.

Gloucs. c. £8,000

Our client is currently seeking several junior programmers to work on real-time process control applications using Motorola and Intel microprocessors. Experience of these micros is not essential but applicants will need a knowledge of a micro assembler and a high-level language (PASCAL, COBOL or similar). Attractive, rural environment, relocation assistance will be given where appropriate.

Contact Brian Coates

Support Specialists

Herts. to £13,000 + car

Due to continuing expansion this subsidiary of a major multinational corporation requires additional support specialists for their European support centre. Candidates must have a software background, a knowledge of comms. protocols, a hardware appreciation and a good client contact manner. Candidates will most likely have had experience with a computer manufacturer or systems house.

Contact Brian Coates

Database Consultant

London £14K to £19K + car

Our client is a major international systems house with many projects underway and proposed. They require a very experienced database specialist to advise on strategy and provide internal support to projects. You should have a sound theoretical knowledge of D.B. technique and a wide knowledge of available DBMS's, their strengths and weaknesses.

Contact Terry Harvey

Evening and weekend telephone numbers:
Terry Harvey Gt. Missenden (02406) 4705
Brian Coates Chesham (0494) 785722

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Contractors – What Will It Be?

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No – we are not aiming for a mass rates explosion but our clients are in need of freelance programming and analytical support and the remuneration is very attractive.

Naturally, we would be more than interested to hear from any contractor who is now or shortly to be available but in particular our requirements are as follows:

Programmers with PL/1, IMS DB/DC and JSP experience

+

Programmers with NCR mini/mainframe, IMOS/IRX/VRX and COBOL experience

+

Programmers with Univac OS1100, DMS, TIP and COBOL experience

+

Analysts and analyst/programmers with banking/financial systems experience, preferably gained in an IBM mainframe environment.

Our clients are predominantly large organisations in the banking and insurance sectors who have extensive development plans and who offer excellent working conditions.

Please send your CV or telephone Barrie Frost

ACR Alimand Computer Resources Ltd
15/17 City Road, London EC1Y 1AA.
Telephone: 01 820 0801 (24 hr) (43041)

Bristol Polytechnic Department of Computer Studies & Mathematics

Temporary
Lecturer II/Senior Lecturer
In Data Processing
- Ref No L53

Temporary
Lecturer II/Senior Lecturer
In Data Processing
- Ref No L54

Applications are invited from graduates for two temporary lecturers in Data Processing, the posts arising as a result of staff secondments. Both posts are temporary from 1 September 1983 to 31 August 1984. Recent commercial experience involving Cobol would be an advantage. For the second post consideration will be given to appoint an Associate Lecturer level, essentially a full-time appointment, and the salary is 50% of the full-time salary scale.

SALARY SCALE: L11 £7,215-£10,883 (bar) - £11,588 per annum
SL £10,883-£12,552 (bar) - £13,443 per annum
The appointment will be made on the appropriate scale according to relevant previous service/experience. (Progression from the L11 scale to the SL scale is in accordance with the provisions of the Burnham Further Education Report).

For further details and an application form, to be returned by 4 July, 1983 please contact the Personnel Office, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol or ring Bristol 886281, Ext 218 or 217.

Please quote appropriate Reference Numbers in all communications.

(4228)

EXPANDING COMPUTER OPPORTUNITIES WITHIN LLOYD'S SYNDICATE

For a graduate in early twenties. The work involves micro and large computer operations using packages, BASIC programming, and statistics. Our business is varied and international. The successful applicant will be working with the Underwriting team in the Room at Lloyd's and must, therefore, not only be adaptable but prepared for a long-term commitment to the Non-Marine Insurance Market.

Apply in writing to Del Rees, R. J. Kiln and Others, Lloyd's, Lime Street, London EC3.

(4194)

NETHERHALL SOFTWARE Microcomputer Programmer

Two appointments for programmers to join a DES financed project involving Netherhall Software and Cambridge University Press in the production of educational software.

The appointments will be initially to April 1st, 1984 at the appropriate point on the LEA Salary Scale 2 and 2T (£4,900-£6,100).

The applicants should have a good working knowledge of programming with microcomputers and an interest in graphic display. Previous experience with BASIC and/or 8080 Assembler Code would be useful though not essential.

Further details from: The Bursar, The Netherhall School, Queen Edith's Way, Cambridge CB1 4NN. Telephone: (0223) 242831.

(4278)

Systems Manager

Nigeria

This post is based in Lagos with John Holt Limited, a Nigerian holding company with diverse trading and manufacturing operations.

We are looking for an experienced systems professional who can manage the group's computer services department as well as act in an advisory capacity to operating units.

Experience of ICL systems 25 is important and some knowledge of micro computers is necessary as there are many micro computers being incorporated in addition. Experience in a developing country would be an advantage.

The appointment represents a real opportunity to contribute to the future development of the company and carries a generous remuneration and benefits package, including free housing, car, two leave passages per year and (where appropriate) education allowance.

For an application form, please write to: Mrs S. Ford, Personnel Dept., John Holt (Liverpool) Ltd, India Buildings, Liverpool L2 0OF.

**John Holt & Co
(Liverpool) Limited**



(4282)

PRODUCTS SUPPORT SPECIALIST

Salary: c.£10K including car/travel
Based: New Malden, Surrey

ADD5 INC of New York is the world's leading independent supplier of Terminal Display Systems. Increasing demand in this fast growing market necessitates the addition of a Product Support Specialist to the European, Middle East, Africa (EMEA) Displays Division.

Based in our New Malden (Surrey) office you will be expected to travel throughout the region and to the U.S.A. supporting an extensive distribution network.

Support will include the Provision and Planning of Training and Seminars, Exhibition Attendance and Product Development Liaison.

You will probably be mid-late 20's early 30's (not a barrier to the right applicant) have recent broad experience in the Terminal/Display market. Contact with customers and Product Development are essential parts of this task. An "in depth understanding" of Displays with the "flair for Micro-Software Development" and "problem solving, including implementation of new releases of software and firmware, are essential qualities as is the ability to deal with diverse questions and a multi-national distribution network.

ADD5 offers the right individual an interesting and rewarding position.

Contact: 8111 Billingsgate 01-849 1272

or

Send C.V. Marked for his attention to:-

ADD5 EMEA (Displays)

137-141 High Street

New Malden, Surrey

ADD5

ZILOG "AN EXCITING OPPORTUNITY"

QUESTIONS

- 1 Are you a graduate?
- 2 Do you have data processing, Cobol and data-base experience?
- 3 Are you currently working for a minicomputer/microcomputer company?
- 4 Do you wish to work on probably the World's finest implementation of UNIX?

Zilog U.K. Limited is expanding due to the enormous impact of the World leading S8000's, and as such we need good analysts to continue to support our Sales and Marketing penetration throughout the U.K. and Northern Europe. Interested? — If so telephone or write to:

Zilog Shelle Mitchell Zilog U.K. Limited,
Zilog House, Moorbridge Road, Maldenhead,
Berkshire SL6 9PL
an affiliate of
EXON Corporation Telephone: Maldenhead (0628) 39200

London School of Economics

Programme in Dynamic Econometric Models, Expectations, Innovations and Choice

Applications are invited for a post as Research Assistant in the above ESRC sponsored research programme. The person appointed will be one of the team in which the principal researchers are J. C. G. Morgan, J. Durbin, W. Butler, M. J. Good, A. C. Harvey and B. Paddy. The topics to be investigated include macroeconomic models, national accounts, demand analysis, time series modelling and dynamic econometric theory.

Candidates should have a background in computer programming and/or econometrics. Candidates should also have a degree in Statistics or Mathematics will also be considered. The main duties of the successful applicant will be to carry out econometric research and develop computer programs.

The appointment is to be taken up as soon as possible and will not last beyond November 1985. The salary scale will be £4,765-£5,900 (providing pending) plus £1,186 London Allowance.

For an application form please telephone 01-444 4790 or write to the Personnel Department, LSE, Houghton Street WC2A 2AE, enclosing a stamped addressed envelope. Closing date: 11th July.

(4277)

UNIVERSITY OF THE WEST INDIES - JAMAICA

Applications are invited from suitably qualified candidates for the following post:

Senior Lecturer/ Lecturer in Computing

DEPARTMENT OF MATHEMATICS

Preference will be given to applicants with interest and experience in Business Information Systems and in Data Processing, but applicants specialising in other areas of Computing Science will also be considered.

Salary Scales (1982/83):

Senior Lecturer - J\$21,477 - J\$27,554

Non-pensionable allowance - J\$ 5,838 - J\$ 7,848

Lecturer - J\$18,255 - J\$24,788

Non-pensionable allowance - J\$ 3,803 - J\$ 6,015

(1983/84):

Senior Lecturer - J\$23,625 - J\$30,423

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(4276)



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MARCH COMPUTER RECRUITMENT

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to £11K + bonus

A minimum of 3 years' experience in program design, testing and implementation in either COBOL or BASIC is essential, preferably on minis.

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A background of around 2 years in COBOL or BASIC programming is required, together with the ability to work on your own initiative.

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(4148)

**Fraser Williams
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ERRATUM

Our advertisement on page 63 of last week's edition should have read "MTE, 8080 based" not 8086. If this makes the positions more relevant to your requirements, please contact Joan Alcock, CDS, Croydon 01-861 8311. (4207)

UNIVERSITY COLLEGE LONDON Department of Computer Science

LECTURESHIP

The Department wishes to fill a vacancy at the Department of Computer Science with an applicant interested in both teaching and research. The area of expertise should include at least one of the following:

Theoretical aspects of Computer Science; systems theory and software engineering; programming languages; languages and computers; processor architecture and technology; intelligent knowledge based systems; numerical methods and applications. Interest and ability to teach programming languages would be an asset. In the case of an exceptionally well qualified candidate, it may be possible to make an appointment at Senior Lecturer level.

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There are also two vacancies for research assistantships on grant-funded projects in computer science, your choice of specialization. A first degree is required, and experience with UNIX and C would be desirable, and a diploma or data communications experience would be an asset.

Salary scale: Lecturer or Research Assistant — £7,190-£14,125 per annum plus £1,180 L.A. per annum.

Further particulars are available from: Assistant Secretary (Personnel), University College London, Gower Street, London WC1E 6BT. (4228)

UNIVERSITY OF LIVERPOOL

COMPUTER LABORATORY

SECTION MANAGER

Applications are sought for a Section Manager to take responsibility for the hardware and communications work of the Computer Laboratory and its services. The person appointed will be in day-to-day charge of the technical staff of the Laboratory and the professional staff of the Microprocessor Laboratory. The person appointed should be a graduate and must have experience in computer hardware design and construction. A knowledge of hardware aspects of computing communications is also important. A relevant postgraduate qualification would be an advantage as would previous experience in project management.

Initial salary will be within the range £10,710-£14,125 per annum with the possibility of subsequent promotion.

Applications, including the names of three referees should be sent by 15th July 1983 to The Registrar, The University, P.O. Box 147, Liverpool L69 3GB, from whom further particulars can be obtained. Quota Ref: 87/88.

EAST ANGLIAN REGIONAL HEALTH AUTHORITY Computer Branch

Applications are invited for the following posts which are based in Cambridge.

Salary Scale: £7,404-£9,025 (plus ADP allowance where appropriate)

Systems Designer

— to work on the design and implementation of Regional Patient Administration systems for CTL 8000 series mini-computer which are installed in each major District Hospital in the Region.

Software Programmer

— to assist with the implementation of the VME operating system on a recently installed ICL 2966. Also required to provide software support to Desktop mini-computers installed in District Finance Offices.

Applicants for the above posts must have at least two years' computing experience and preferably be educated to degree level. Any relevant experience would be an advantage.

Application form, job description and further details from the Regional Personnel Division. Telephone 0223 61212 ext. 244.

Closing date: 8 July 1983

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Team Leader
to £14,000

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Due to continued expansion several vacancies have arisen within a section of a large computer engineering development group, where there is a range of projects covering a wide spread of activities mainly aimed at the development of sophisticated operating systems and language processors. We require experienced software specialists who are creative and innovative. At senior levels we would expect candidates to be capable of providing technical design and leadership in operating systems software and compilers. Essentially we would be interested to hear from any candidates with a systems software background who wish to make a significant step up in their career.

Our client occupies a leading position in the design, development and manufacture of mini computers systems which are installed throughout the world. They can offer you the benefits of a large company with the attraction of variety and scope to suit your talents. The company operates a contributory pension scheme, 25 days holiday and offers generous relocation assistance where necessary.

(4238)

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HR

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Please don't misunderstand us. The problem — reconciling an impressive increase in turnkey project business ranging in value from £50K-£4million and an urgent requirement for additional first-class engineers — can only be solved by someone with your expertise. In either Systems or Project engineering, you'll find the expanding Software Sciences environment both stimulating and rewarding.

Systems Engineer

c£16K

We're seeking a systems specialist to join a compact engineering management team. Taking responsibilities first, your involvement will include systems configuration, equipment selection, sales support, proposal writing, customer liaison and supplier contact. To cope, you'll need to be an effective communicator with a BSc/HND/HNC, at least 8 years' relevant experience and a formal hardware background gained with a manufacturer or on large system support/implementation. Configuration of VAX systems and data/voice communication equipment experience (with a strong data bias) is essential; knowledge of local area networks and various protocols such as X25, HDLC and SDLC is desirable. There will be some UK travel.

Project Engineers c£10K-c£11.5K

There are two posts here, both calling for men or women aged 25-35 who have an HND/HNC and either 2-3 years' directly relevant experience or a background with a mini/micro/peripherals manufacturer. Familiarity with data communications would be an advantage. You'll be involved in project engineering (planning, installation, maintenance and customer/sub-contractor liaison) and sales support (systems configuration, planning, proposal work and costing). One of the positions will also include responsibility for involvement with bid proposals as well as working on current projects.

All posts are based at Farnborough. In addition to the attractive salaries already quoted, there are other generous benefits. Prospects in this progressive organisation are unlikely to be a problem!

Please contact Lynne Perry,
Recruitment Officer, Software Sciences Limited,
Abbey House,
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Tel: (0252) 544321.

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Senior Analyst/Programmers Analyst Programmers/Programmers c. £8,200 - c. £11,250

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TOTAL, CICS or MANTIS will be an advantage, although training is available to broaden your knowledge. As a major employer, we offer competitive salaries, real career development, relocation help and lots of other benefits.

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Expansion of these services has led to immediate career opportunities within our head office in Bristol. Our 56 acre complex provides a modern working environment - minutes from both surrounding countryside and the thriving city centre - one of the fastest economic growth areas in the country.

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Our New York associate consultancy company have been assigned SIX ONE YEAR CONTRACT OPPORTUNITIES for experienced IBM ANALYST/PROGRAMMERS. Their client is world famous and is at the forefront of modern technology. These exciting positions demand the ability to communicate with users and can only enhance the contractors future career!

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- COBOL, VSAM, TSO/SPF (or equivalent On-line Editor Capabilities)
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PLUS FEATURES - Knowledge or understanding of:-
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COMPUTALINK Ltd
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Software Group Leader required to set up a new software section at our Newport site. TEM/272

Section Leaders required to manage and technically direct small software teams within an established software function at Templecombe. TEM/283

Systems Analysts to lay down the framework of a multi-processor design from customer requirements, and to communicate and control these designs during implementation. TEM/273

Software Systems Designers able to develop their detailed software design concepts and lead technically a team of implementation programmers. TEM/274

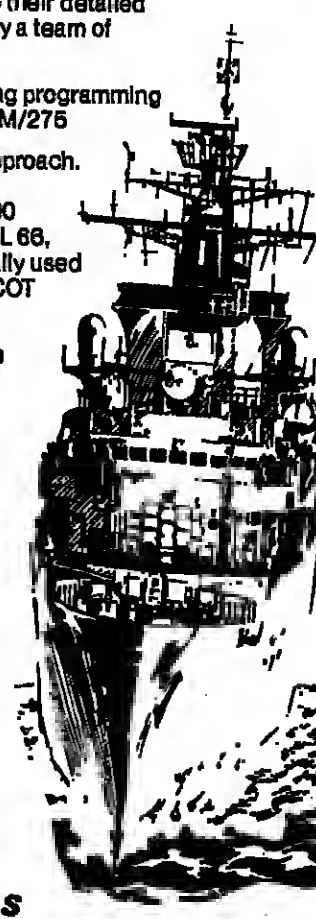
Programmers wishing to develop their existing programming abilities and level of design responsibility. TEM/275

Software is developed using a Host-Target approach. The host computers are DEC PDP11 and VAX machines, supporting INTEL 8086 and TI 9900 microprocessors. Languages used are CORAL 66, PASCAL and ASSEMBLER, which are normally used in conjunction with a highly developed MASCOT design and implementation methodology.

First-rate working benefits include innovative training programmes and the job security of joining a successful company. A generous relocation package will be offered where applicable.

Please ring Peter Whitfield, Technical Resourcing Manager on Templecombe (0983) 70551 for an application form, or send a full c.v. to him at Plessey Marine Research Unit, Wilkinstroop House, Templecombe, Somerset BA8 0DH for vacancies at Somerset. Or ring Marjorie Barnes, Personnel Officer on Newport (0483) 270110 for an application form, or send a full c.v. to her at Plessey Marine Limited, Spytty Road, Newport, Gwent for vacancies at Gwent. Please quote relevant reference number.

PLESSEY
electronic systems



The Computer Board and Research Councils Joint Network Team and Network Executive Head and 5 Staff Posts

The Computer Board and the Science and Engineering Research Council have for some time had a joint programme for the support of networking. The Joint Network Team (JNT) consists of eight staff who have been responsible for a programme based on the principle of Open Systems Interconnection (OSI) designed to lead to the integration of local and remote data communications throughout the university and Research Council community. A Network Executive is now to be formed with responsibility for the operation of a joint academic network using X25 and related protocols. All staff are based at the Rutherford Appleton Laboratory in Oxfordshire.

Applications are invited for the Head of the JNT and the Network Executive; for two posts in the JNT and three posts in the Network Executive. The head will report to a part-time Director of Networking appointed by the Computer Board for the programme, and to the Director of the Rutherford Appleton Laboratory in other matters. An important part of this post will be to establish and maintain collaborative relationships with senior managerial and technical staff in computer centres throughout the academic community. Activities of the JNT include the specification of OSI protocols, the management of projects to implement these protocols, collaboration with university computer centres in formulating communications plans and advising the Computer Board and Research Councils. The Network Executive will be responsible for providing a wide-area network service in collaboration with the major computer centres.

All candidates should have appropriate professional/academic qualifications and a sound basic knowledge of computing and telecommunications technologies. The ability to manage technical projects will also be required. Familiarity with the nature of computing in a university environment and of OSI techniques is desirable.

Appointments will be made on the following grades according to age and experience:

Senior Principal Scientific Officer	£15,605 - £19,317
Principal Scientific Officer	£11,343 - £14,931
Senior Scientific Officer	£ 8,970 - £11,476
Higher Scientific Officer	£ 7,149 - £9,561

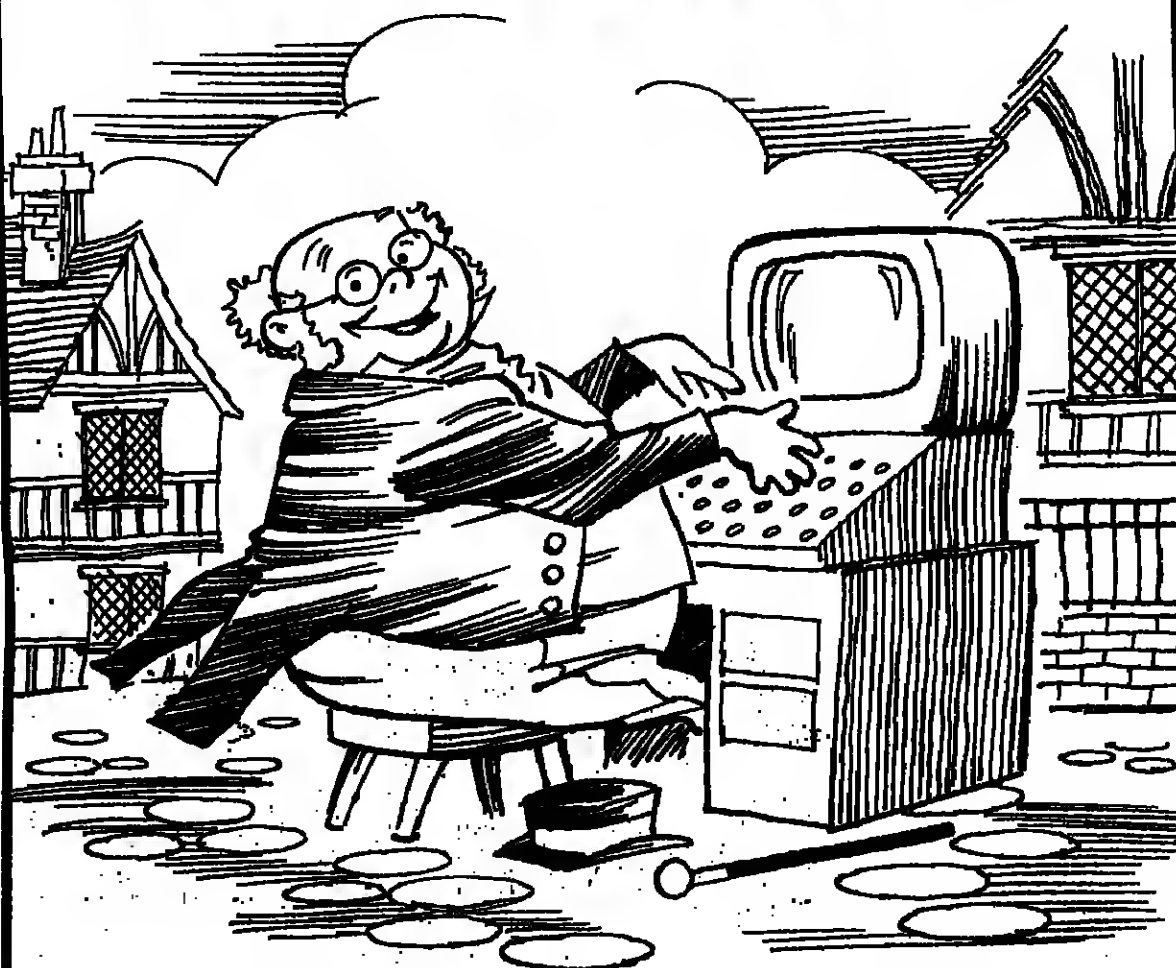
The posts involve some travel and may be filled by secondment from a university for a fixed period or as permanent employees of the SERC.

Some assistance with expenses incurred in house sale/purchase may be available.

Applicants should contact: Recruitment Office, Personnel Group, Rutherford Appleton Laboratory, SERC, Chilton, Didcot, Oxon OX11 0QX. Telephone: Abingdon (0235) 464455 quoting reference VN146.

Closing date for applications: 15th July 1983.

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Applicants should have 5 years' commercial experience in a mainframe data processing environment. Experience of all the phases of project development is essential. The successful applicants will lead small teams of Systems Analysts, engaged in new IBM project developments. Previous IBM experience is desirable, but not essential.

These developments are part of a major expansion programme which will result in further opportunities for career progression through to senior management.

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Computant

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Plus car and benefits

Our client, TRANSNET, a recently established and autonomous UK subsidiary of an international multi-billion dollar Group is marketing and installing IBM Series 1 based general purpose and specialised communications systems and services. These include stand-alone and integrated SWIFT and message-switching network interchange systems. The Company requires additional personnel to enhance its UK operations. Applicants should be dynamic and self-motivated, with good experience, particularly in some of the following: SWIFT, store and forward message-switching, data communications. Knowledge of operating systems and an Assembler, or a communications orientated language, is desirable; EDX/EDL is an advantage.

These positions offer considerable scope for client liaison, opportunity for travel and will provide ample scope for career progression and promotion. People appointed will be trained abroad.

In addition to basic salary, Company benefits include BUPA, Personal Pension Scheme, a Company car after training and a Company Bonus Scheme is being introduced.

Ref 9981

digital

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Ref 9982

For further information please contact Jenny Dalrymple-Hay or Ian Murray-West on 01-493 2947, 8am to 10pm, Monday to Friday, or weekends, Jenny Dalrymple-Hay on Beaconsfield (04946) 4579, quoting appropriate reference number.

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(4251)

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The Organisation an autonomous and highly successful Division of an American International Company has built its reputation on the rapidly expanding and demanding field of high technology imaging equipment.

To sustain their growth and development plans further experienced Software and Systems Engineers are urgently sought.

To take advantage of this excellent opportunity your background should include several of the following:

- Graduate, in relevant discipline
- A minimum of 3 years Industrial/Scientific Software experience.
- Knowledge of C/FORTRAN/BCPL/ASSEMBLER in a real-time environment.
- Firm systems understanding
- Experience of Image processing/Process control/Command & Control applications.
- Specific knowledge of Intel RMX 86/DG RDOS would be advantageous.
- High degree of drive, initiative and enthusiasm.

The Company has recognised the importance of software development tools and has invested heavily in their software engineering development lab, which now includes a VAX 11/750, several DG's and other advanced 16 bit microprocessors.

Prospects within this highly professional Organisation are excellent, as is the benefits package, including relocation assistance where applicable.

For further information and a Confidential discussion CONTACT: NICK REID on 01-629 7262 (Reverse Charges) or 01-644 1973 (Evenings or Weekends).

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RPG II

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Circa. £10,000

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The environment within MIS is relaxed yet professional and encourages creativity. We believe in giving you complete responsibility for new and existing systems, which will occasionally involve European travel. In addition you can expect your career to progress to Project Leader in the near future as part of our overall planned growth.

For further information please contact our Advising Consultant Stephen Brown on 01-935 0671 or Hornchurch (04024) 72610 evenings and weekends. Alternatively send your C.V. to him at the London office address below.

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Manchester M3 2ER
061-833 0427

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The Channel
Sutton, Surrey SM2 6AS

The Council's computer installation is based on two ICL 2966 computers supporting a County-wide network including five ME28s and over 150 terminals. The Council is committed to both the implementation of VME and an extensive development programme. To support these projects a number of additional posts have been created and, initially, the following appointments will be made:

Systems Analyst

£8,658-£10,071 p.a.

(pay award pending)

Applicants must be able to demonstrate a sound background in analysis and design.

Analyst/Programmer

£7,791-£10,071 p.a.

(pay award pending)

A minimum of four years' relevant experience is required. Knowledge of TPMS and Data Dictionary would be an advantage.

Junior Programmer

£2,363-£2,325 p.a.

(pay award pending)

Applicants should have up to one year's experience of COBOL/RANGE COBOL.

For further information on these posts, ring Ian Pearce, Truro (0872) 71796.

Programmer

£2,363-£2,325 p.a.

(pay award pending)

To join a small team of Highways Engineers to assist in software development, including conversion to VME. Applicants should preferably have an appropriate University qualification and be competent in COBOL and FORTRAN. For further information, ring Mike Aspin, Truro (0872) 74282, Ext. 157.

Systems Programmer

£7,791-£10,071 p.a.

(pay award pending)

Starting salary dependent on experience. For further information, ring Roy Cowley, Truro (0872) 74282, Ext. 262. Knowledge of a VME environment is preferred.

Application forms are available from: The County Treasury, County Hall, Truro, Cornwall: TR1 3BD. Closing date: 10th July, 1993. Please quote reference No. 120 when replying.

(4255)

Challenging appointments with a fast-moving computer specialist!

Quadra, a wholly-owned subsidiary of the multi-million Glass Hovest Group, is a leading national computer software business and service organisation—specialising in NCR 1 series and operating from offices in London, Edinburgh and South Yorkshire.

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South Yorkshire based—

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A dynamic experienced computer person, you will be capable of

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analysts/programmers working on projects throughout the UK. You will

deal with our clients and play a full role in corporate development and

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South Yorkshire, London, Edinburgh and Birmingham—

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plus company car where appropriate.

We want people who count both systems analysis and programming

among their abilities. You will need to be self-motivated, willing to

work on your own initiative and able to discuss clients' needs directly

with them. We reward hard work and need staff who can develop as we

grow.

All appointments carry with them excellent fringe benefits commensurate with a highly successful and progressive Group of Companies.

Write or telephone for an application form.

Quadra

QUADRA COMPUTER SERVICES LIMITED

Rothamsted Rd., Watby, South Yorkshire LS26 8EL. Tel: (01937) 515474

Programmer (COBOL)

Surrey Neg. c. £9,000

Super-Mini

This could be the experience you have been searching for to launch your career into the world of those respected DP professionals whose knowledge is constantly sought after.

This very successful and extremely well bred manufacturing company are driving forward with major systems developments based on their Hewlett Packard HP3000 Series 64 2 M/BYTE Super-Mini making complete use of database/on-line software as well as other sophisticated productivity tools.

Working closely with two Senior Analyst Programmers you will have the opportunity to become the centre of competence for structured programming methodology, advanced productivity tools, supervising the training and progress of 2 juniors, as well as participating in the day to day solution of programming requirements.

For further detailed information on the company and computing environment please contact Ian Goldsmit on 01-935 0671 during office hours; alternatively submit your confidential Career Résumé to the London address below.

Technical, Sales & Management Appointments

Specialist Computer Recruitment Ltd

James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461
Birmingham • London • Manchester • Brussels • Amsterdam

Cornwall

Realtime Software Development Office Automation — Unix and 'C' Language

Northern Home Counties

Attractive Salaries
(Relocation Available)



Northern Telecom is recognised worldwide as a technological leader in the design and manufacture of advanced communications equipment. We have pledged our commitment to the European information systems market by the establishment of European New Product Development capability through our European arm, Northern Telecom Data Systems.

The principal aim is to provide a new range of distributed data processing products for a worldwide office automation market. This leading edge technology provides a range of facilities that reflect world market needs in keeping with a corporate commitment towards open protocol enhanced networking for the 1990's.

The development project calls for several key appointments with varying degrees of real-time programming expertise. Ideally you should possess sound knowledge of UNIX or its derivatives and have gained programming skill in 'C' language. Proven experience however of other high-level real-time operating systems and structured languages such as PASCAL are of equal interest.

These positions are unique in the opportunity they afford to individuals looking to combine the ultimate in technical experience with the important benefits of long term security and enlightened working environment befitting a European R&D Centre.

For more details of these exciting new opportunities telephone Alan Carnell on 01-935 0871 or 05827 2976 outside working hours, alternatively submit your Curriculum Vitae to him at SCR's London address.

Massive investment in our new Research and Development Centre has created a range of opportunities for Software Professionals from Programmer through to Project Leader status.

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James House, 46 James Street,
London W1M 5US
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35-37 Great Charles Street,
Queensway, Birmingham B3 3JY
021-236 3781

NORTH
International House, 84 Deansgate,
Manchester M4 2ER
061-833 0427

BELGIUM
Avenue Louise 327,
Boite 4, 1050 Bruxelles
010 322-640 7151/71

HOLLAND
Willemsparkweg 92,
1071 H M Amsterdam
010 3120-760947

HP 1000 SYSTEMS PROGRAMMERS

A rare opportunity has arisen for Systems programmers with HP 1000 Assembler experience.

Due to a significant increase in workload, our Client has a number of vacancies for Systems Programmers able to operate at the lowest level of the machine, and with a flair for originating peripheral handler software.

These positions are offered either as permanent or contract posts, and we have been commissioned to accept, and give serious consideration to applications received from University students with the right experience background, who wish to work during the Summer break.

These positions attract a superb financial package so whatever your current position and salary, if you have the right background you cannot afford to let this opportunity slip by.

For more information telephone our advising consultants on 044282 6744 during office hours, or either Geoff King on 0296 830506 or Sue Onslow on 044282 2335 evenings and weekends. Alternatively should you wish to send an immediate written application please address it to:

GKS Recruitment
1b Church Yard, Ting, Harls. HP23 5AE

The IBM SYSTEM 34/36/38 Recruitment Specialists



**CITY OF LONDON
COMPUTER
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LIMITED**

**Senior Analyst/Programmer
(Deputy to General Manager)
Up To £12,000+ Benefits**

We specialise in 'first-time' users and small businesses offering a highly effective batch bureau service and tailored in-house systems. As a matter of policy we work in very close liaison with our clients, with a high degree of involvement of our staff in systems and service.

Our unique product is PENSYS 34/38 a complete administration system for Pension Schemes, with comprehensive data retrieval functions, payroll interfacing and user programming facility. PENSYS can be run equally effectively on our micro Systems, our System 34 or reworked for customer micros and minis with extensive backup consultancy from us.

We have implemented services and software into insurance company record keeping, accounting and valuation; Insurance broker/client record-keeping; investment performance analysis and professional time-costing.

The team is small but growing, working in a very relaxed atmosphere with a wide variety of work.

Candidates should be self-motivated, able to work with initiative and have a GSD background. Age is not a problem, though 25-35 is the best range.

Please telephone for an early informal discussion to: Richard Mills on 01-354 1055 during office hours or on 01-958 2553 in the evenings or weekends. Alternatively please send full details to him at:

MARCH 1 NOEL ROAD, LONDON N1 8HQ
COMPUTER 01-354 1055
RECRUITMENT

Communications Software and Networking Specialists

... Work at the Leading Edge

Herts/Bucks Borders

Attractive Salaries

Success in the highly competitive office automation market can only be achieved by those manufacturers with a solid and planned commitment to the development of totally compatible management systems. Our Client has recognised this need at both Corporate and European level by investing in a new European Research and Development facility in the UK to produce a whole range of new generation products.

A key factor in the development of a new family of DDP/office automation products is its ability to be successfully interfaced with a wide range of differing computer equipment within an integrated network. The role of the Communications Software Specialist is therefore of paramount importance to our new product development programme.

You could be working with a computer products manufacturer, a reputable software house or as a user within a sophisticated IBM SNA environment. Your skills should include the development of communications software that complies with or emulates IBM 3270, 3780 and batch protocols.

Alternatively if you have solid experience in writing software to interface with local area or wide area networks, particularly Ethernet, then please apply. If your skills however have been gained in packet switching and you have a sound grasp of X25 and X29 standards then there are also projects to interest you.

Vacancies exist from Programmer through Team Leader to Project Leader level and provide the opportunity to work on individual and team based projects.

Ring Alan Carnell on 01-935 0671 to discuss your credentials further or telephone 05827 2976 if you work late. A.C.V. to our London office will suffice if you prefer.

Local Area Networking



Wide Area Networking



Electronic Office
Systems

Technical Sales & Management Appointments

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Specialist Computer Recruitment Ltd

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021-236 3781

NORTH
International House, 84 Deansgate,
Manchester M4 2ER
061-833 0427

BELGIUM
Avenue Louise 327,
Boite 4, 1050 Bruxelles
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HOLLAND
Willemsparkweg 92,
1071 H M Amsterdam
010 3120-760947

Outstanding Opportunities in New Product Design South Hertfordshire

nt northern
telcom

Northern Telecom Data Systems is one of the top six suppliers of advanced DDP/automated office systems in Europe and constitutes a key element in a \$3 billion North American Corporation. Over \$1 billion is currently committed to applied R&D worldwide in order to protect our lead in communications and advanced information handling technology. A new family of office automation products, specifically designed for the European market is currently being developed at a new research and development centre in South Hertfordshire and a number of new positions have been created to address the hardware aspects of the new systems.

Candidates for these positions should be able to demonstrate in-depth understanding of the peripheral components of modern high-speed DP systems. Of particular interest are skills in evaluating design and performance features and integrating them into the total system. Preference will be given to candidates with a recognised electrical and/or electronic engineering qualification supplemented by several years practical experience with a sizeable minicomputer manufacturer.

The positions will be based in an attractive modern purpose-built centre designed to facilitate ease of liaison between other technicians on the project. Additional to an attractive salary, the appointments carry a generous relocation package where applicable and a range of other benefits befitting a market leader.

Telephone our Advising Consultant **Alan Carnell** on **01-935 0671** (24 hour answering service) or **05827 2976** after hours to arrange a prompt and confidential interview. If you so wish please submit your Curriculum Vitae to him at SCR's London office.

Hardware and Peripheral Integration

Specialist Computer Recruitment Ltd

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James House, 46 James Street
London W1M 4JF
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021-236 3781

NORTH
International House, 44, Deansgate
Manchester M3 2JL
061-833 0427

BRISTOL
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0117-322 640 7151 71

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Wemmerhoeve 9
1031 CA Amsterdam
010 3120-760947

SENIOR OPERATOR

Ravel, one of the leading fashion shoe retailers in the country, are seeking a Senior Computer Operator for their ICL ME28 installation. The job entails complete responsibility for batch and on-line processing, file security and software updating. It is essential to have a sound knowledge of JCL and TME.

There is a five-day week including regular Sunday working. Hours of work are 8 am-5 pm with the exception of Sunday. However, the demands of this responsible position in a fast moving industry mean that these are occasionally exceeded.

We offer excellent employee benefits including a generous staff discount, luncheon vouchers, non-contributory pension scheme and annual bonus based on profits.

The salary paid will be commensurate with the experience of the successful applicant.

For further details and an application form please telephone or write to Rosemary Johnson, Personnel Officer, Chesham Ravel Ltd, 60 Neasden Lane, London, NW10. Tel: 01-450 3181.

ravel

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With the opportunity to learn the latest release of software.

Our client needs to staff a small development with an experienced Programmer/Analyst who has the following skills:

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wanted to develop nationwide sales of computer peripherals.

Successful track record of selling to computer distributors, dealers and OEMs essential.

Attractive salary, car and commission.

C.v. to:
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De Bono M/P Computing Ltd.
66 Banbury Road
Oxford

MID GLAMORGAN COUNTY COUNCIL
County Treasurer's Department

PROGRAMMER (Fortran)

£5,352-£7,545 — under review

The Authority operates ICL 2976 and 2958 computers under the VME/B operating system and a vacancy has arisen for a Programmer within a project team concerned with the development of systems for the technical departments of the County Council. Applications are invited from suitably qualified persons with sound FORTRAN experience preferably gained on a large mainframe installation or, in the case of graduates, during a period of industrial training.

The computer centre is situated in a central location in Cardiff and the benefits of working with the Authority include flexible working hours, contributory pension scheme and a generous scheme for the payment of lodging and disturbance allowances and removal expenses. (Commanding Salary dependent upon qualifications and experience).

NATIONAL CONDITIONS OF SERVICE
Application forms to be returned by 4/7/83, are available from the County Treasurer, Mid Glamorgan County Council, County Hall, Cardiff, or telephone Cardiff (0222) 28033 ext. 520.

CANDIDATING WILL DISQUALIFY



calma
USA

CALMA IS A LEADING MANUFACTURER OF COMPUTER GRAPHICS SYSTEMS
The European Customer Services Department has vacancies in the Software Projects Department for the following positions:

CONSULTING APPLICATIONS MANAGER

An experienced Manager is required to manage a small group of multi-disciplined CAD/CAM specialists. The successful candidate is likely to have gained considerable experience as a practicing mechanical engineer before moving into the area of computer-aided design and will now be involved in the application of CAD/CAM to a wide range of mechanical processes. This position qualifies for a company car.

SENIOR SOFTWARE ENGINEER (DEVELOPMENT)

The person will be responsible for design and development of software to meet special application requirements of European clients. A minimum of four years' experience of Computer Programming in an Engineering environment is required. Experience of Fortran is required. Experience in Design/Coding or use of CAD/CAM Systems for Mechanical Engineering would be an advantage.

SENIOR SOFTWARE ENGINEER (OPERATING SYSTEMS)

The person will be responsible for giving advice and support to Calma personnel and customers across the range of Calma Computer Systems. Experience in the use of VMS is essential. A minimum of four years' experience of the use of computers in an Engineering environment is required. Experience in one or more of the following areas would be an advantage.

COMMUNICATIONS

CAD/CAM
NUMERICAL CONTROL
FINITE ELEMENT MODELLING
DATA BASE DESIGN AND IMPLEMENTATION

SENIOR SOFTWARE ENGINEER (COMMUNICATIONS)

The person will be responsible for giving advice and support to Calma personnel and customers on the Communications software available to link Calma systems, both to each other and to other mainframe and mini-computers. A minimum of four years' experience of the use of computers in an engineering environment is required.

SOFTWARE ENGINEERS (DEVELOPMENT)

People are required to work on a variety of projects commissioned by clients. These projects extend the range of applications which can be addressed by DDM. The Calma three dimensional modelling system for Mechanical engineering. A degree in Computer Science or engineering is required. Experience of Fortran would be an asset. Salary is negotiable according to experience, and benefits include free membership of BUPA, a contributory pension scheme and over four weeks' annual leave.

Please contact Robin Mills for an application form:



calma
USA

CALMA COMPANY
Beech House, 373/399 London Road
Camberley, Surrey GU15 3HR
(0276) 682021

C³ Systems

Berkshire/Surrey Border £10-18K

Command and Control systems in the Defence field and for Emergency Services is one of our clients areas of expertise. To cope with new orders they need extra staff at levels from programmer to project manager. Previous relevant experience is essential. Excellent career prospects. Ref 2306/A

Defence Systems

North London £9-14K

Mathematicians and Electronics Engineers with good degrees are needed for design, development and trials work on major new weapons systems. High calibre colleagues, tough but realistic deadlines and excellent facilities make this an exciting work environment which also offers plenty of opportunity for personal progression. Ref 2306/B

Systems Engineers

Surrey up to £13K

Vacancies exist at all levels for CORAL programmers and microprocessor specialists to work on defence projects. They will join electronics engineers (more needed) to develop various types of system ranging from Fire Control to ECM. Our client can offer relocation to this attractive location. Ref 2306/C

2900 Programmers

Mid Surrey up to £9K

Our client needs additional staff to join teams working in pleasant new offices. Financial applications knowledge (Insurance/Pensions) would be advantageous but two years' experience of COBOL and VME is essential TPMS being desirable. Some possibilities for travel. Ref 2306/D

Expanding systems house offers exciting prospects to candidates with five years' experience, at least two years on HP 300, to work on real time systems using IMAGE, QUICK, QUERY etc. Possible opportunities for overseas travel to Europe and North America, but must work will be done in London. Ref 2306/E

Computer Professionals

4, Kendrick Mews, London SW7 3HA Tel: 584 8790

Programmers & Systems Analyst

Surrey £6.5-£12.5K

Rapidly growing Insurance company requires a Systems Analyst and Cobol Programmers to work on new developments. Database, CICS and Insurance industry experience are prerequisites for the Systems position and two years' COBOL (one year IBM) for the programming vacancies. Usual excellent Insurance Co benefits. Ref 2306/F

Micra Programmers

Beds £8.5-12K

Vacancies exist for graduates with a minimum of two years' programming experience on micro computers (ideally 6800 assembler, PASCAL or RTL 11) to work on a range of microprocessor based POS products. The company has exciting growth plans and can offer first-class career prospects. Ref 2306/G

Software Professionals

Surrey Border £10-18K

Expanding systems house has vacancies for staff at all levels to be involved in the development and installation of real-time, defence, communications and information systems. Knowledge of DEC PDP/VAX, DG, Tandon or Fanuc hardware and software preferred. Exciting work and swift career advancement. Ref 2306/H

Systems Analysts

West London £8-12K

New systems using IDMSX and DDF in a large 2900 installation provide opportunities for analysts with proven development experience some possible as on analyst/programmer. Knowledge of IDMSX and retail applications is required for these excellent career openings. Ref 2306/I

Analyst/Programmer

London + Overseas Travel £9-11K

A minimum of 12 months' on-line programming experience is required to join a team involved in the development and support of real-time software products for the UK and European insurance markets. Personal attributes are of prime importance and the opportunity exists to move into a specialist technical role. Ref 2306/K

Senior Systems Designers

Herts £13K

A software house providing total systems solutions on mini and micro computers has vacancies for three real-time systems designers to work on scientific applications, medical applications and communications software. Fluency in Assembler and one or more of CORAL/PASCAL/BCPL together with relevant applications experience is essential. Ref 2306/L

Communications

London £10-12K

An international communications company is about to invest in a major reorganisation of their message processing network and central database. Vacancies now exist for real-time programmers with experience of Intel 8086 or VAX (PDP 11 also considered) hardware and, respectively, PL/M or PASCAL/RTL2. Ref 2306/M

Analyst Progs & Systems Progs

North-West London £10-14K

The UK subsidiary of a major US systems house has vacancies for programmers with sound COBOL or device handling experience to work on transaction processing and networking systems. The company's products are implemented on TANDEN computers on which full training will be given. Ref 2306/N

Systems Engineers

London Based £11-17,000

A large consultancy/systems house needs staff with research or defence project experience in the areas of navigation, signal processing, underwater technology, automotive engineering, electronics or communications. Candidates should be knowledgeable about good quality software and systems design. Ref 2306/P

CP Computer Professionals looks after the professionals.

For further information, write to Computer Professionals quoting the advertisement reference no; alternatively phone Isabel Bruce or David Fletcher on 01-584 8790.

DP Professionals . . .

Let your career grow in a new company

Glaxo Export is a new company formed to serve the ever increasing demand for Glaxo's highly successful ethical pharmaceutical products. We are currently in the process of extending the Management Services Group which will provide vital support in all aspects of the new company's activities — based on Hewlett Packard 3000/64 hardware

with upwards of 120 terminals. To complete our team of professionals, we are looking for highly motivated graduate-calibre people for the following posts. Salaries significantly in excess of those indicated will be paid to men and women with outstanding experience.

Senior Systems Analyst c.£13,500

With at least 3 years' experience in systems analysis and design. A good knowledge of systems methodologies and developed communication skills, both written and oral, are essential. Programming background an advantage.

Project Leader — Office Systems c. £13,500

Aged 25+, proven experience in computing or office automation coupled with above average interpersonal and communication skills are essential.

These rewarding positions, based at Islington, North London, carry an attractive range of benefits including non-contributory pension, subsidised restaurant, and relocation assistance, where appropriate. Promotion prospects, as you would expect in a multi-national group, are excellent.

Senior Programmer c. £11,500

At least 3 years' commercial programming experience is essential, 2 of which should have been spent working in COBOL. Supervisory experience would be an advantage.

Systems Analyst c. £10,500

Aged 23+, with at least one year's experience in commercial systems analysis and design. Programming background desirable.

Programmers c. £8,500

Aged 22+ with at least one year's experience of commercial programming using COBOL.

Please contact Miss Sheena Ross, Company Personnel Officer, on 01-263 3080, or write to her at:
Glaxo Export Limited, Graham Street, London N1 8JZ.

Glaxo Export Limited

Systems software design + an exclusive project + advanced telecomms applications = a real future for senior engineers.

If you have significant experience in either software design or systems software you will be ready to explore the opportunities offered here.

The company, part of a large communications system organisation, has recently been described as one of Britain's star industrial performers, with an outstanding future.

Opportunities exist for a number of Software Engineers at Principal and Senior Engineer levels. Initial

responsibilities will include the development and implementation of sophisticated multi-threaded software for telecommunications systems involving man-machine interfaces.

Other work is currently in progress on Real Time Operating Systems and Software Development Tools, and will be further developed as the company moves forward with the next generation of telecommunications systems.

Candidates will have three or more years experience of software design and development including knowledge of both low and high level languages (e.g. Pascal and C). Additionally a

genuine desire for involvement with intricate and sophisticated systems is advisable.

These challenging positions are located in rural Berkshire close to the M4 and M40. The company occupies an eighteenth century country house and grounds on the Thames with outstanding facilities for weekend and evening recreation, including squash, croquet, boating and tennis. There is also a social club with bar facilities for the less energetic.

Salaries will be in the range of £8,000 to £12,500 and the wide range of benefits provided include paid overtime, a generous relocation allowance, and 25 days holiday.



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MVS SPECIALISTS FOR SOFTWARE DEVELOPMENT

● SUPERCOMPUTERS

Cray Research is the market leader in the design, manufacture and support of large-scale scientific computer systems. Cray Systems are installed in the USA, Japan, France, Germany, Holland and the UK.

A Software development group is based in the UK with world-wide responsibility for specific software products. One additional person is needed to join a small team working on software to link IBM/MVS systems to Cray systems.

● EXPERTISE

We are looking for experienced MVS Systems Programmers with an interest in software development. You should be fluent in IBM Assembler and be familiar with using and interfacing to some or all of these software components:

MVS/SP1.3, MVS/XA, JES2, JES3, TSO, SDF, RACF, UCC-1, HSM

Experience of IBM software maintenance and installation procedures using GMP would be an advantage.

● OPPORTUNITY

We offer a stimulating development environment with a prestigious and important product. Some travel to the USA and European countries will arise in the course of development and supporting the customer base. Training in CRAY systems and in relevant software components will be provided.

● SALARY TO £16,000

An attractive salary ranging up to £16,000 is available to the right applicant.

The benefits include:

- Company Car
- PPP
- Life Assurance
- Profit-Sharing Bonus
- Share Purchase Scheme
- Attractive Working Hours location with relocation assistance if required

Please phone Michelle Green on 0734 791180 for an application form or write to John Fleming, Software Manager, Cray Research (UK) Ltd., Seymour House, The Courtyard, Denmark Street, WOKINGHAM, Berkshire, RG11 2BB.

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PRODUCTION ENGINEERS

Saudi Arabia Salary negotiable above basic Plus usual Middle East benefits package

Our client urgently requires two Systems Programmers for Project teams running IBM installations.

A degree or equivalent qualifications is essential.

Requirements are for:

These are prestige projects and the successful applicants will be responsible for all systems aspects in the installations.

For further information please contact Jenny Dalrymple-Hay or Ian Murray West on 01-493 2947, 8 a.m. to 10 p.m., Monday to Friday, or weekends, Lyda Murray West on Milton Keynes (0908) 563415, quoting Ref. 8983.

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SOFTWARE TOOL-MAKER!

WALTON-ON-THAMES

£10K+

For sales, sales and support complete turnkey systems for particular software sectors. Their success is reflected in a full order book, new products and a healthy budget for new R&D projects and tools.

Those persons with some relevant experience, would get exposure to several languages - Assembler, high level, Pascal, Fortran, etc., comm. packages, down-line loading and PROM techniques, development aids, software generators - these skills will be at a premium in tomorrow's world.

You are already proficient in these areas you will qualify for a larger salary and a move to new range definition and design.

For further details today.

Ref: CA 547

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EDUCATION COMMITTEE
NORTH CHESTER COLLEGE
Department of Business
Management and Trade
Union Studies

LECTURER I or
LECTURER II
IN COMPUTER STUDIES

required from September 1, 1983, or as early as possible thereafter level of appointment to depend on experience and qualifications.

Further particulars and application form available from J. A. Smith, Principal, North Chester College, Park Road, Chester, Cheshire, W43 9BB. Closing date: July 1, 1983.

CAREER OPPORTUNITIES WITH LEADING BRITISH MICRO MANUFACTURER

SYSTEMS PROGRAMMERS £8.5K to £13K, OXFORD BASED

We offer a rare opportunity to live in Oxford and work with a team of experienced systems engineers, developing our next generation of computer and instrumentation products.

Our current very successful microcomputer family makes a state-of-the-art network system and new developments will make use of 16 bit processors and gate array technology. Our products are designed to maintain our reputation for high standards of quality and reliability.

The successful applicants will join small teams of systems programmers responsible for all the software on our range of microcomputers. This covers firmware operating systems and utilities for both stand-alone microcomputers and networked systems.

Systems Programmers contribute to development projects from concept through to release. Projects are typically led by small teams providing

maximum involvement and opportunities for responsibility at project leader level.

Previous experience should include a good degree and at least two years' experience of systems software development in industry. Experience of assembler and a high-level systems programming language is highly desirable, as is an understanding of microcomputer hardware.

We offer modern office accommodation and a salary range of £8500 to £12700 per annum depending on experience. An attractive range of benefits includes 25 days paid holiday; free BUPA life and disability insurance; a pension scheme and generous help with your relocation to this area.

If you are interested in this vacancy please contact Polly Keane on Oxford (0865) 726155 or write for an application form, quoting ref: 8P/CW6.

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Real Time Developments is a highly successful company with a commitment to providing quality software services to a wide range of organisations. Increased business has created a requirement for a number of highly motivated and adaptable Software Engineers and Consultants.

Candidates should have a background in mini/micro computers particularly DEC, INTEL, ZILOG, MOTOROLA etc., and possess at least five years' experience using both high level and assembler languages. A knowledge of Real Time Software, Data Communications or Industrial Automation would be highly advantageous.

The successful candidate will occupy positions of responsibility, including team leadership, with ample opportunity to broaden technical experience. As a thriving and expanding company, Real Time Developments offer competitive salaries and attractive conditions of employment which will include relocation assistance where necessary.

LOCATION: HAMPSHIRE

JA 381/1

Kenrick Computing Ltd., a member of the Kenrick Group of companies, provides a variety of computer services to commerce and industry. These include package and tailor-made systems, bureau services and total turnkey solutions based on the complete range of Data General computers. Since the company's formation in 1979, Kenrick Computing have seen substantial growth in their client base and now have a requirement for a range of staff from Programmer through to Project Leader.

Candidates should have in depth programming skills gained in a mini-computer environment, preferably Data General using Business Basic. A knowledge of production systems would be highly advantageous. The positions involve substantial customer contact and the successful applicants must be able to demonstrate the ability to liaise effectively at all levels.

In return, Kenrick Computing offer excellent salaries and the use of a company car.

LOCATION: WEST MIDLANDS

JA 321/2

Gould S.E.L. is a world leading manufacturer of 32-bit minicomputers. The software support team plays a vital role in the increasing demand for the company's products. Vacancies exist for Software Analysts to expand the team responsible for UK and Northern Europe software support. Experience is required in two areas:

Scientific, Technical and Real Time - applicants should have 4-5 years' experience in a scientific, industrial or Real Time environment and be fully conversant with operating systems and communication software; scientific high level languages and/or assemblers.

UNIX and C - applicants should have in depth experience of UNIX and/or C and will be involved in a challenging role of pre- and post-sales support of UNIX and its associated products.

We offer excellent salaries, company cars and a range of benefits normally associated with an organisation of our standing.

LOCATION: SURREY

JA 321/3

As suppliers of application packages and turnkey systems, Computerplan Software Services has built an enviable client base within industry, commerce and local government. A continually increasing demand for the company's products and services has created a requirement for adaptable and highly motivated Analyst/Programmers.

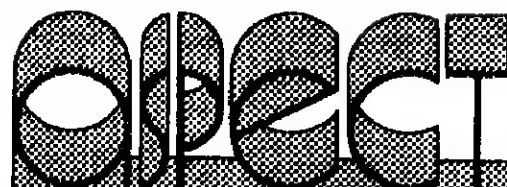
The positions involve providing software support for new sales and the development of existing systems. Therefore experience of commercial application analysis and programming on mini-computers will be essential. A high degree of user contact is required and candidates must be able to demonstrate the ability to communicate at all levels.

As a successful organisation, Computerplan offer excellent salaries which are in a range of £9,000-£13,000 according to experience. In addition the company offers exceptional opportunities to develop a stable career in a stimulating environment.

LOCATION: WEST MIDLANDS

JA 321/4

Name _____
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Home tel _____ Work tel _____ Ext _____
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computer recruitment limited

IBM OPPORTUNITIES

PL/1 PROGRAMMERS **C. LONDON** **to £14,000**
Major expansion within this progressive company has led to vacancies for all levels of programmers. Opportunities exist within the development teams for applicants with a minimum of 18 MONTHS' PL/1 experience, and up to FOUR YEARS' experience for Team Leaders. Our client retains large IBM mainframes running under MVS, using CICS and IMS, training offered where necessary.

COBOL ANALYST/PROGRAMMERS **LONDON** **£12,000**
This well-known company offers fantastic opportunities for individuals with a minimum of THREE YEARS' COBOL and some DL/1 experience. The client retains IBM 4341 hardware running under OOS/VSE, they offer TRAINING in CICS, loads of system development work and career progression. You will be involved in new projects and handle the training of junior staff.

PL/1 ANALYST PROGRAMMERS **LONDON** **£16,000**
This international company has two openings for career-minded individuals. If you have a minimum of 2 1/2 YEARS' PL/1 experience, and wish to work on a variety of systems, have loads of client contact, and hold a responsible position please now for further details. Training offered in TP and DATABASE.

COBOL PROGRAMMER **C. LONDON** **£10,500**
This prestigious firm of merchant bankers based in the city can offer an exciting career move for a programmer with a minimum of 18 MONTHS' IBM COBOL experience. Ideal applicants should be in their 20s, ambitious and looking to progress into analysis. In return the company offers TRAINING in CICS and DL/1 and excellent benefits including subsidised mortgage.

COBOL PROGRAMMERS **LONDON** **£11,000**
This Central London-based company seeks to recruit two programmers with a minimum of TWO YEARS' COBOL including SIX MONTHS' CICS EXPERIENCE. This prestigious company offers TRAINING in DL/1 and analysis, and a variety of commercial systems. Excellent career prospects and benefit package.

ANALYSTS **LONDON & HOME COUNTIES** **to £18,000**
We have at present many requirements for ANALYSTS, SENIOR ANALYSTS, and PROJECT LEADERS for some of the largest companies in London and the Home Counties. If you have good analysis skills and are thinking of changing your position - why not call us now to discuss your future career.

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SYSTEMS ANALYSTS

Ideally, applicants will have 3 to 4 years analysis experience and be able to demonstrate involvement in a number of projects from concept through to implementation.

One for ICL ME29

One for Honeywell Level 6's
Honeywell Level 6 experience under GCOS would be an advantage.

ANALYST PROGRAMMER

Applicants must have extensive experience of programming in COBOL on Honeywell Level 8 under GCOS. You should be able to demonstrate involvement in analysis work.

PROGRAMMERS

Suitable applicants will have at least 2 to 3 years relevant COBOL experience which must include time spent on Honeywell Level 6.

Please apply with c.v. including current salary to:

Bob Mouldale,
Group Computer Development Executive,
Nottingham Manufacturing Company p.l.c.,
Botany Avenue, Mansfield,
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SYSTEMS & PROGRAMMING

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BURROUGHS CMS COBOL PROGS. - Surrey, Middx, Herts
HP3000 IMAGE, VIEW, COBOL PROGRAMMERS - London
PDP 11/70 CTS 300 & 500 DIBOL PROGRAMMERS - London
ICL 2800 VME COBOL, IDMS PROGRAMMERS - London
PDP 11 RSTS OR RSX11M BASIC +2 PROGRAMMERS - Berks
DEC SOFTWARE TECHNICAL AUTHOR - Home Counties
IBM SYS 38 RPG III PROG. - London
ICL 2800 VME COBOL TPMS PROG. - Surrey
VAX VMS COBOL PROG. - Surrey
VAX VMS COBOL DECNET/DBMS PROG. - Surrey
IBM OS/MVS COBOL/ASSEMBLER ANALYST/PROG. - London

Please contact Lorraine, Lynne or Heather at KPG or contact Lorraine on Walton-on-Thames (98) 45552 (Evenings/Weekends)

PERMANENT

PROGRAMMER/ANALYST West London **c £9,500**
A major multi-national capital equipment manufacturer is looking for a young programmer/analyst for their West London headquarters. You will be responsible for the day-to-day control of the PDP 11/70 - and for ensuring that user problems and queries are sorted out quickly and efficiently. You should be capable of dealing with all levels of management, and be looking to grow into more of an analysis role. Recent hands on experience of DEC hardware using DIBOL is essential - knowledge of RSTS/E is preferred. Quota Ref. 8353/CW.

PROGRAMMER HP3000 - City **to £11,000**

Eighteen months Cobol on the HP3000 and a high level of initiative and independence are the major requirements for joining this international trading organisation. You will be part of a fast moving department linking various mini and micro to the HP through the database to ensure that users have instant access to the financial and commercial information they require. International travel could be open to strong candidates. Quota Ref. 8049/CW.

VAX SYSTEMS PROGRAMMER Herts **to £11,500**

A major engineering group needs a VAX systems programmer - to qualify you need personally plus, communications ability and technical expertise. The operating system is UNIX - which has been running for about six months - and you will become the in-house expert. Quota Ref. 8034/CW.

PROGRAMMERS & ANALYSTS ME29, Surrey **£11 - 15,000**

A small independent consultancy, this company has now outgrown its initial staffing, they subsequently need to recruit experienced analysts and programmers to form new client teams. Knowledge of pensions, membership systems, payroll etc, with a database orientation preferred. On-line Cobol is essential. Quota Ref. 8074/CW.

ANALYST/PROGRAMMERS HP/VAX - London **to £14,000**

Five years exposure to either of the above - or any other middle range mini - and a definite leaning towards either IMS or IDMS database, are required by this major engineering group. You will act in a consultancy role - giving advice to users in the commercial, financial, materials control and projects areas. Clear thinking communicators only should apply. Quota Ref. 8085/CW.

We also have clients urgently looking for the following permanent staff:

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IBM ASSEMBLER **W. London** **£15,000**

Are you a creative thinker who enjoys problem-solving? The stimulating atmosphere of this rapidly expanding software house will appeal to you. Client support, training and trouble-shooting. Excellent prospects. Ref: 01145

PROGRAMMER/ANALYST **Berks** **£13,950**

Are you bored and in need of variety and stimulation? Rejoice your aims with fourth generation DEC and IBM hardware and a range of software and communications systems. Ref: 01108

IBM PROGRAMMER **Bucks** **£11,500**

Join world leader as member of small O.P. department programming IBM 4331 for all the commercial, financial and business needs associated with a thriving organisation. Relocation assistance where appropriate to this pleasant environment. Ref: 01128

PROGRAMMER **Berks** **£10,000**

Your energy, initiative and determination to succeed will guarantee an excellent future in commercial and financial applications. Using Pascal and RSTS on DEC PDP11 with extensive user involvement. Genuine opportunity for personal growth. Ref: 01147

SOFTWARE DEVELOPMENT **Berks** **£14,100**

Climb the ladder to success with your Fortran, PLM or Assembler in this profitable, energetic software house. Develop real-time industrial applications. New position due to continued expansion. Ref: 01137

FORTRAN PROGRAMMER **Berks** **£12,500**

Develop software for real-time industrial activities on behalf of interesting range of manufacturing customers. With Fortran or Assembler expertise you will be free to generate and apply your own ideas. Ref: 01135

SYSTEMS ANALYST **Berks** **£11,000**

With U.K., European and American interests this renowned company can offer challenge, variety and reward as result of internal promotion. In return for your expertise in interfacing and database systems on ICL hardware. Ref: 01130

COBOL PROGRAMMER **Berks** **£10,000**

At the central core of the management services division of a major concern your programming expertise in financial applications will be well rewarded. Young, friendly department. Excellent career prospects. Ref: 01142

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CONTRACTS

Force Eight Computer Services is an established software house divided into three areas:- Contract Recruitment, Project Management and Training.

If you are an experienced and professional contractor available or becoming available soon, or should you wish to discuss the possibility of becoming a contractor, please telephone Jackie Robb on 01-888 3761 or after working hours Redhill 60777 for further information or send your full c.v. which will receive our prompt attention.

We require the following:-

Analyst Programmer

CICS, DL/1. Minimum 2 years. Germany 3 month contract.

Systems Designers Analyst Programmers

Minimum three years' experience with CICS and DL/1 for six month contracts.

Consultant Lecturers

CICS, DL/1, VSAM

Force Eight Computer Services

8 Mim Walk, Croydon, Surrey CR0 1EA.

PL/1 PROGRAMMERS CENTRAL £7500-£12000

Programmers are required from Junior (12 months experience) to Senior (Lead Programmer) level to work on IBM 3033 under OS/VS with IMS, CICS, VS. You will be working on "cross the board" Commercial applications in an on-line Database environment for this large Services Organisation, which offers excellent career advancement as well as technical training. Any ASSEMBLER knowledge would be useful although not essential. REF SR/CW.

MINI & MICRO PROGRAMMERS SURREY £7000-£12500

We currently have five clients with a total of nine positions in the Surrey area. If you have a minimum of 18 months' COBOL or BASIC experience on any mini or micro please contact us NOW. These vacancies offer an excellent opportunity to broaden your D.P. experience on new machines and become more involved in analysis work on Commercial systems. REF SR/CW.

HONEYWELL LEVEL 64 SYSTEMS & PROGRAMMING MANAGER To £13000 TECHNICAL SUPPORT PROGRAMMER To £10000 OXFORDSHIRE

Following a Consultancy study of their D.P. systems, our clients are implementing a major redevelopment of all systems. A TP and Database environment is planned with two key people to control it. A Systems & Programming Manager is required to take control of a small but expanding department, and a Technical Support Programmer to cover Operations/Programming support. Candidates for both positions should have a sound knowledge of LEVEL 64 with TDS. In addition experience of BTNS, TAILOR, TDS GEN is required for the Tech Support position. REF MN/CW.

PROGRAMMERS & ANALYST/PROGRAMMERS CITY To £10000+

Major banking organisation are currently expanding and are looking for 12 months + COBOL experience. Present kit is IBM 4300 under DOS/VSE. CICS training will be provided and a Database is soon to be introduced. Excellent career prospects for ambitious people and a very attractive bonus scheme on top of the normal bank benefits. REF MB/CW.

PRE- & POST-SALES SUPPORT CENTRAL To £14000 + Bonus

Our client, a large Software House is seeking a Senior Database Analyst Programmer and Analyst Programmer. The job involves the design (through to implementation) of on-line Database systems and you would be working in all professional teams covering various projects. Although not essential, knowledge of REXUS RAMIS and Inquire would be very helpful. An IBM MVS/TSO background is preferred, with COBOL and/or ASSEMBLER languages. These positions offer considerable career opportunities within a sound technical environment. REF SR/CW.

ICL PROGRAMMERS LONDON & S.E. To £15000

We have various excellent career opportunities to work for either Software Houses or End-Users in COBOL on 2800 kit of all sizes from 2803 to dual 2806 and larger. Clients are particularly seeking VME/IS skills with TP and/or Database experience. Please call for details. REF MN/CW.

PROGRAMMERS & SYSTEMS PROGRAMMERS SUSSEX COAST To £11500

If you want to get involved in the large scale development of Communication Systems then this will interest you. Our clients, a multinational organisation, are seeking able, self-motivated people to fill the above positions. You will have had Real-Time programming on MICROS, and any exposure to INTEL, VIOETEX OR TELETEX would be a definite advantage. The employment package includes relocation assistance and usual large company benefits. REF SR/CW.

SYSTEM 38 ANALYST/PROGRAMMERS LONDON To £15000

Two positions exist with this expanding Manufacturing company. Exposure to RPG3 and MAAPICS is preferred, but for the Senior position management potential is essential. At least 3 years' GSD experience is needed for the other position (to £15000). Excellent career prospects and benefits package. REF MB/CW.

PDP TO IBM MIDDLESEX £9000

Established company utilising PDP 11/44, RST5/E, offers opportunity to work on an IBM Mainframe to a Programmer with solid BASIC + 2 background and some systems experience. A mature attitude with an outgoing personality and sense of humour would fit in well with their development team. Perks include subsidised licensed restaurant, discount on products and bonus scheme. REF JH/CW.

MVS COBOL MIDDLESEX £8000 to £11000

This major Computer Services Company has several vacancies in the Analyst Programmer level and will train Programmers in Analysis techniques. They run various large IBM mainframes (with a 3081 recently installed and require upwards of two years OS COBOL on any applications. The company is fully committed to the development of CICS systems and ANY TP or Database experience would be advantageous, although full training will be given where necessary. Minis and Micros also play a large part in the work and associated exposure to these would also be helpful. Prospects are excellent, and large company benefits will apply. REF SR/CW.

WANG VS ANALYST PROGRAMMER N.W. LONDON £9000-£11000

Here is a great opportunity to use your experience to the full with this rapidly expanding Commercial Business Systems company. This company are seeking an enthusiastic Analyst Programmer to cover all aspects of installing computer systems. The work is interesting, varied and involves all aspects of systems development, including working with clients from feasibility through to implementation. You will need a minimum of 12 months' WANG VS experience, using either BASIC or COBOL. An excellent remuneration package is offered together with very good career prospects. REF SR/CW.

UNIVAC ANALYST PROGRAMMERS KENT To £11000 + mortgage

This financial establishment is currently developing systems of 1100 kit using TP/DMS, and requires experienced 1100 people to join their team. Systems are all TP/Database, using a 160-screen network. Interesting work, with excellent career prospects. Salary and benefits package. REF MN/CW.

RETRAIN TO RPGIII CITY To £8,000 + BENEFITS

A Bank in the City have recently upgraded to System 38 and require a competent RPGII Programmer to retrain. All normal bank perks are available and this position has sound career prospects. Minimum of 12 months' RPG2 experience required. REF MB/CW.

ANALYST/PROGRAMMER SURREY £8000-£11000

DEC PDP 11 site using BASIC + under RST5/E is seeking experience of Commercial Systems for position involving development of Sales Marketing Systems. You will be either a DEC Analyst Programmer, or a good Programmer ready for Analysis and responsibility. REF JH/CW.

IBM SYSTEMS ANALYST CENTRAL To £11000

This International Organisation requires an Analyst with a technical background (COBOL, CICS, DL/I) used on IBM 4300 under MVS and experience of Commercial systems. The position would suit a good Programmer or Analyst Programmer with a good background in Analysis without losing their technical involvement. Large company benefits and a progressive career path exist for a go-ahead person in this well-organised D.P. department. REF SR/CW.

MICRO ANALYST PROGRAMMER CENTRAL LONDON £8500

Our clients, a household name in the Entertainment Industry, are expanding their D.P. facilities and are looking to recruit a responsible Analyst Programmer. They currently run a large network of micros, and the successful applicant will be involved in the development of new systems, improving existing systems, evolving new software and generally assisting in the day-to-day running of the network. You should have 18 months' general systems experience gained in a MICRO BASIC CP/M environment. A challenging position, offering excellent salary and benefits include STL and free lunches. REF SR/CW.

HONEYWELL SYSTEM SOFTWARE ENGINEERS BERKS To £10500 + car

A Software Engineer is required to install and maintain LEVEL 66/DPSS systems. Previous S/W engineering experience is not necessary but applicants should have good GCOS, TDS/DS/OM4/TP skills, preferably with GMAP. REF MN/CW.

CONSULTANTS VARIOUS AREAS £ VERY GOOD

We continuously recruit for a number of established Software houses who are always interested in sound RPG2/3 and COBOL experience. The work is hard but varied and the rewards are high. You must have designed at least one system. Please call for further details. REF MB/CW.

DIBOL (RETRAIN COBOL) MIDDX/BERKS £7000-£10000++

Two companies are looking for COBOL Programmers from 12 months, exp. to Senior Level to work on either PDP or VAX equipment. The VAX installation requires a degree and personable manner for client contact, to be part of a strong Systems Development Team working on a Hotel Reservation System. Excellent prospects into analysis or pre/post Sales Support. The PDP site is looking for a Programmer and Senior Programmer with experience of commercial installations systems. Relocation assistance available. REF JH/CW.

IBM PROGRAMMERS & ANALYSTS ESSEX and CITY £7500-£13000

Our client, a Financial Institution, requires staff from 18 months' programming experience to Senior Analyst level where proven experience from start to finish is necessary. Insurance or Financial applications would be preferred, and knowledge of ANY TP monitor would be advantageous. Kit used is IBM 303X range, under MVS in a full on-line environment. Full relocation, free insurance, pension, lunches are some of the benefits provided by this large organisation. REF SR/CW.

HONEYWELL LEVEL 64 STAFF LONDON/S.E. To £10500 + perks

You're GOLD DUST once again! (But then you always were!) We have eight positions currently registered, from Programmer to Senior Programmer or good Analysts/Programmers skills. Users are all using TDS (some with IDS) in Manufacturing, Financial and Commercial environments. Call for details. REF MN/CW.

SOFTWARE ENGINEER RSX11M WEST END

International company is seeking a SOFTWARE ENGINEER to develop RSX11M software and interface with VIOETEX. Work also involves fulfilling, resolutions and implementation. Travel to Europe and the States will also be involved. REF JH/CW.

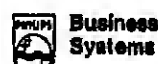
Move with Philips Business Systems Career opportunities in Colchester Development Engineers - Communications £9,000-£11,400

Philips Business Systems manufactures a wide range of data processing and electronic office equipment.

We have recently centred our marketing operations in Colchester as part of a major project.

On our communications side we have new vacancies for Development Engineers. You will join our expanding Adaptive Engineering Team who are responsible for adapting in-house and third party equipment to meet customer requirements. You will provide expertise and support on both hardware and software development in the telecoms and data field, including working on our new and successful digital PABX.

We invite applications from those qualified ideally to degree level in electronics and with development experience in communications. In addition to highly competitive salaries, we offer 25 days annual leave, staff restaurant, discount on Philips products, contributory pension scheme and relocation assistance if necessary. Please apply in writing or return the coupon below to John Freeman, Personnel Officer, Philips Business Systems, Elektra House, Bergholt Road, Colchester, Essex CO4 5BE. Telephone: 0206 575115.



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PERMANENTS
ANALYST/PROG Basic + required to work on commercial systems, using SYSTIME running under RST5/E. £10,000 - Yorkshire
ANALYST/PROG Baso +, minimum two years' exp, SYSTIME 6000, RST5/E. £11,000 - Kent
PROGRAMMERS All levels of exp, for substantial trading organisation PL/1, MVS exp essential. ENRG - City
SENIOR ANALYST Must have banking systems experience and knowledge of IOMS. Programming background not essential. £15,000 + plus package
SENIOR ANALYST/PROGRAMMER Must have banking system experience, IBM System 38, RPG3, CL MIDAS. £14,000 + banking benefits

OTHER PERMANENT/CONTRACT VACANCIES ON FILE
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POSITIONS
The company continues to grow rapidly and therefore requires additional senior engineers in the Wokingham area. The Senior Engineer position involves high technology maintenance to component level on the Cray mainframe processors and associated peripherals. Shift work and overtime may be necessary. The successful applicants will have the opportunity to travel within Europe and the USA.

THE PACKAGE
The company package for employees is first-class and includes:
★ Excellent salary
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COBOL PROGRAMMERS READING AND LONDON UP TO £13,000

Expanding, Reading-based, totally PRIME Software House requires COBOL Programmers with minimum of three years' experience. PRIME knowledge desirable but not essential.

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ICL Operator or Controller

Salary range £6,534 to £7,013 including London Weighting and Shift Allowance (Review pending).

Reporting to the Shift Leader, this position requires two shift working. ICL 2800 experience would be an advantage.

Southwark is an equal opportunity employer. Applications are welcome from candidates regardless of sex or ethnic origin and from registered disabled persons.

Telephone 01-761 2870 (24-hour answering service) any time for an application form, or write, or a postcard to: The Personnel Officer, London Borough of Southwark, 25 Commercial Way, London SE16 6BG. Please quote reference CW/8/344 and job title. Last date for receipt of completed Application Forms: 16.7.83. (4311)

Group Management Services Officer £12,456-£13,713 incl.

A Group Management Services Officer is required to lead, motivate and co-ordinate Management Services activities either for a number of Service Committees, departments or in accordance with programmed reviews. The successful applicant should be suitably qualified, have experience of dealing with clients at the highest level and have a proven record of success.

The Management Services Unit in Greenwich, under the direction of a Management Services Manager, is a part of a composite Personnel and Management Services Department and is responsible for advising the Council on needs studies, organisation, staff structures, methods, development and maintenance of productivity schemes and job evaluation.

The Council has recently taken a decision to restore its services to 'pre-duty' levels as a result of which the Management Services Unit faces a heavy programme of work. In addition it is heavily involved in the extension of computing into major areas of the Council services.

Application form from Personnel and Management Services Officer, London Borough of Greenwich, Pegg Middleton House, 80 Woolwich New Road, Woolwich SE18 6HQ. Tel 01-854 8988, Ext. 2034.

Closing date: 16th July 1983.

The Council is an equal opportunities employer. Applications welcomed from disabled people.

GREENWICH (4327)

SALES BIT Quality of Management—57 What's the idea of that incentive?

LAUNCHING a sales incentive scheme should not be introduced without considerable forethought and planning.

Some basic questions need to be asked: What is the objective? There's no point having a sales incentive scheme without a positive objective. Before anything else is done the sales manager must firmly establish what he is attempting to achieve. Increasing the market share? Launching a new product? Offsetting an adverse trend in sales? Countering the launch of a competitive product? There is a multitude of possibilities. The essential action is to decide which one, and why.

How long should it last? It all goes back to what you are trying to achieve. Certainly one key objective is to motivate the salesforce and sustain its interest. If the duration is too short some of your people may never get up to speed. Some salesmen are more reactive than others. On the other hand if it lasts too long it will become passé and boring, devoid of motivation.

"Good gracious, I didn't realise I was still running!" is really saying "Your incentive scheme has failed, you are inept, you don't even recognise your own failures!"

What are the financial implications? There is no point rushing into a sales incentive scheme if you have no real awareness of what it is likely to cost in terms of hard cash. Are you offering too much, too little? You may need to solicit help from the chief accountant to find the answer, but you must have the answers before you even think of a scheme. If you are too frugal you may end up with a plan that fails to motivate. If you are too generous you may find the extra business becomes so marginally profitable (or even loss-making) that the scheme and the extra business is not worth all the hassle. This is particularly true of short-term schemes where the effect could be merely to attract business that would normally have occurred before or after the period concerned at a lower than normal profit margin.

Careful financial evaluation may reveal that beyond a required level of sales the company can be very generous and still do well for itself. If so, this should be reflected in the structure of the incentive scheme. The chief accountant is normally the best judge.

What type of scheme is most appropriate? First you have to decide whether an individual or team-related competition is best suited to your particular company, product and personnel. Clearly either approach has benefits and disadvantages. The individual prize approach, operating on a "first past the post" basis (or even first two or three) is appealing because it is easy to understand and easy to administer. Furthermore, the available funds can be concentrated on a small number of prizes which means they can be valuable, attractive and really worth winning.

On the other hand, the team approach is anathema to the high flier. He sees it as a barrier to personal glory; he feels he is carrying the entire team on his back. Others will share the spoils of his victory — and he's damned if he's going to do that!

This is a classic situation that the sales manager needs to identify. He must make it clear to such individuals that their sales and performance will be the company's measure of those personal qualities that will ultimately be reviewed when the topic of career development and personal advancement is at hand.

They should get the message! Alan Williams

PUZZLE ANSWER

THE equation is:

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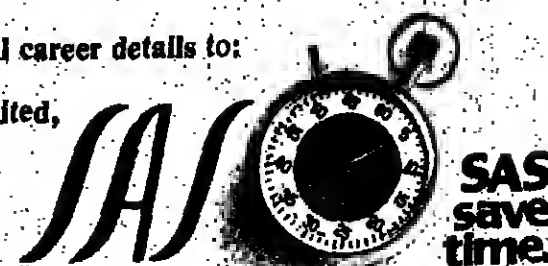
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